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California's Computer Magazine

JULY 15 - AUG. 12

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Apple Regroups: Sculley Talks

The WELL: A New Dimension In Teleconferencing

Stocks On Your Home Computer

Columns For Commodore, Macintosh, CP/M, Data Base Management, Small Business And Computers

Creators Of The Monster Mac: (from bottom left) Doug Gilbert, Stas Lewak, Kurt Johnson, Duane Maxwell

Bringing You MacMegabytes: (l-r) Stephen Beck, Henry Spragens, Phat Ho Of Beck-Tech

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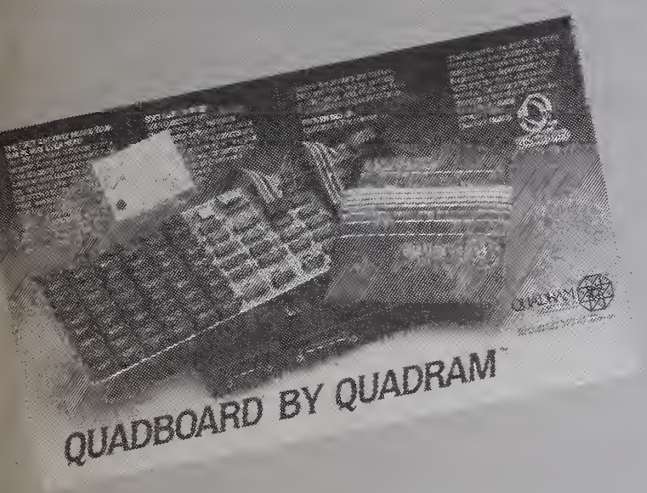

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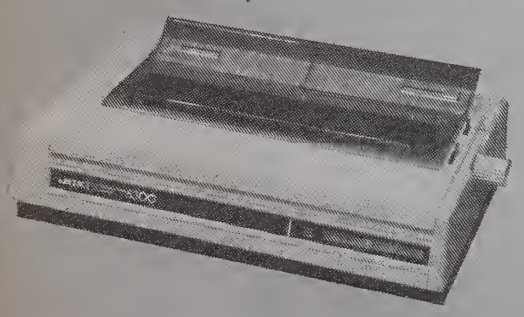

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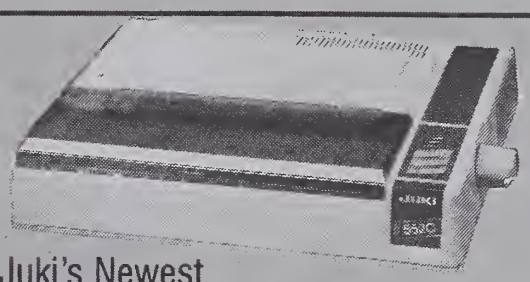

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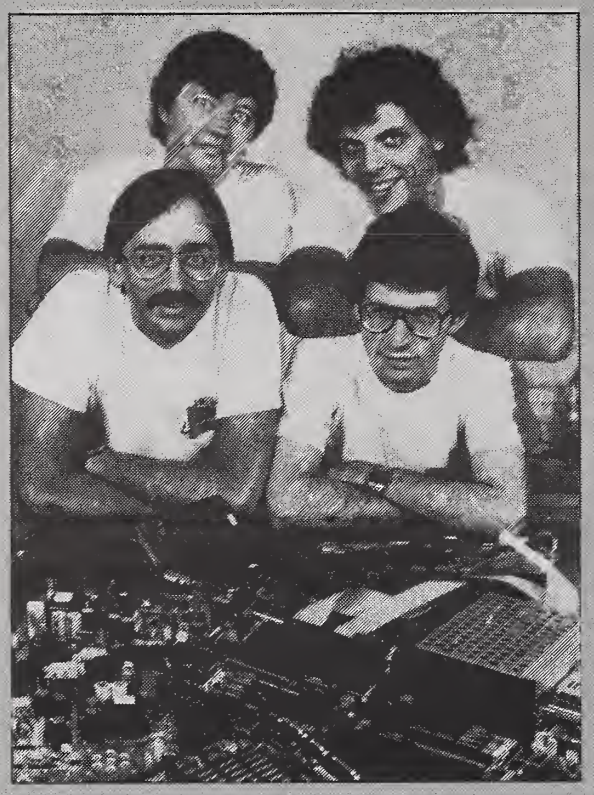


These erstwhile garage entrepreneurs at Levco Enterprises are going big-time with the 2-megabyte Monster Mac. Photo: Robert Matheu

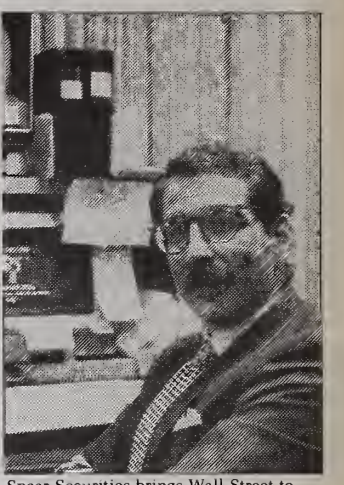
COVER STORY

30 Macintosh Upgrades:
Out Of The Garage
By Bill Reefer
In response to high prices from Apple and a general sense of doing it better themselves, third-party Mac upgraders are becoming a major force in the industry.

FEATURES

28 Epson Interact Conference
By John McMullin
Ever-aware of the presence of user groups, Epson recently sponsored a nationwide video conference to discuss its new and current products. A report on the event.

42 The WELL: A New Dimension In Teleconferencing
By Laurie and Steve Foster
In the interests of having a free flow of information and ideas, the folks at Whole Earth are introducing a low-cost telecommunication system, The WELL.



Spear Securities brings Wall Street to your living room by letting you trade stocks on your home computer. Photo: Robin J. Dunitz

COMPUTERS ON THE AIR

48 The Affordable Computer Hotline
By Tim Tyler
A visit with the hosts of San Jose's premier computer talk show.

48 The Famous Computer Cafe
By Benjamin Krepack
Now nationally syndicated, LA's radio program talks to the people behind the scenes in the computer industry.

52 Stocks On Your Computer
By Robin J. Dunitz
Spear Securities and The Source introduce do-it-yourself stock trading on your home computer.

64 The Surge In Supercomputers
By Jack Epstein
With advances in technology and dropping price, the giants of the computer world are becoming an affordable option for many companies.

The Affordable Computer Hotline in San Jose brings the TV talk show into the computer age. Photo: Dave Lepori

COLUMNS

68 Small Business And Computers
By L.K. Engelhart
Why a consultant might be more help than a vendor in automating your office.

70 Commodore
By Matthew Leeds
A look at the new 128 machine.

72 Macintosh
By Barbara Leone
Was *Jazz* worth the wait? It depends...

74 CP/M
By Robert D. Athey, Jr.
Creating a few templates can get you through routine tasks painlessly.

76 Data Base Management
By Bill Amatneek
How to get your dBase files to work happily with MailMerge.

IN DEPTH REPORT

Are You Safe From Hackers?

Sysop Tom Tcimpidis became the reluctant focal point of legal controversy over who's *really* responsible for information on bulletin board systems. Photo: Ann Summa

56 Telecommunications And The Law
Privacy, Property Rights, And The First Amendment In The Computer Age
By James Evans
A survey of legal opinion and pending legislation on the subject of just how free access to computerized information really ought to be.

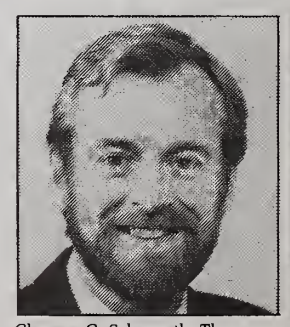
Meanness At The Speed Of Light
By Michael Wiesenberg
A former phone phreak, now in the business of busting computer criminals, makes a case for hacking not being good clean fun.

DEPARTMENTS

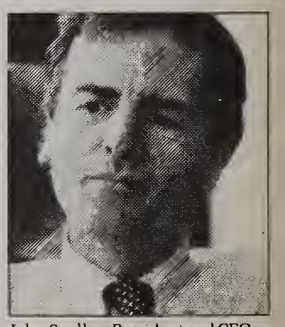
8 Edit Mode
Don Hamilton surveys the current state of the industry — how bad is the current slump? Cynthia Slocum reports on the latest developments from Orange County's Thorn-EMI.

16 Business Reviews

24 Industry Update: Apple Regroups
Laying some rumors to rest, and starting quite a few others, Apple President and CEO John Sculley recently addressed the MacForum in San Francisco on his company's future.



Clemens G. Scharwath, Thorn-EMI's v.p. of marketing, introduces new software, including an updated *Perfect* series.



John Sculley, President and CEO, charts a new course for Apple Computer. Photo: K. Gypsy Zaboroskie

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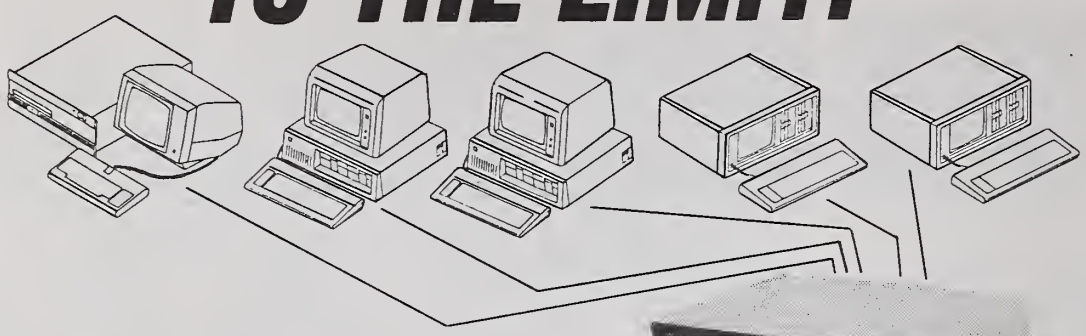

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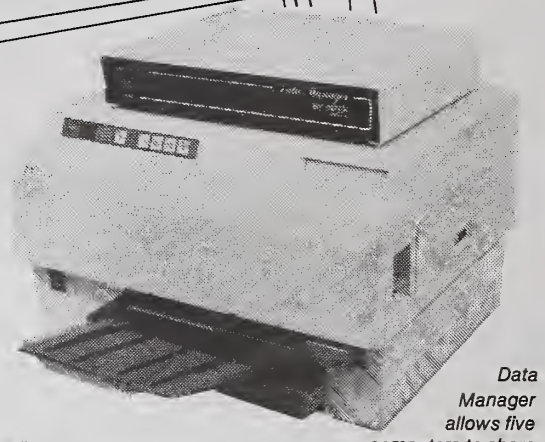

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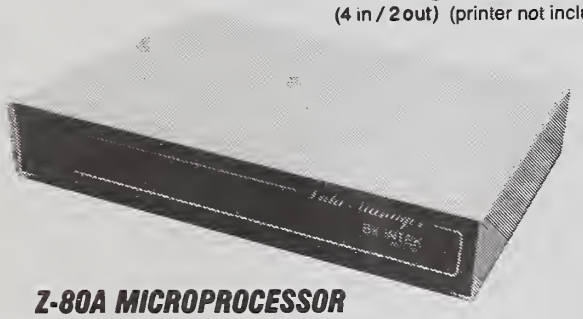

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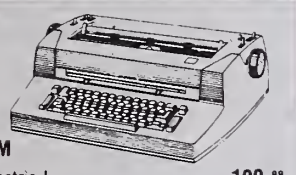

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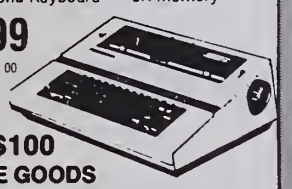

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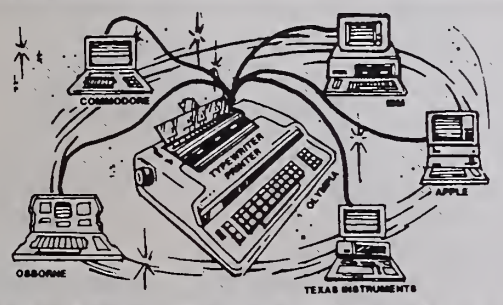

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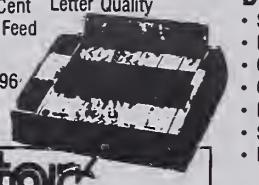

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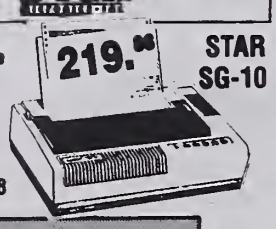

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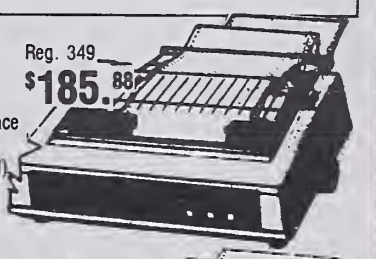

D-200 Dot Matrix Printer Was 595
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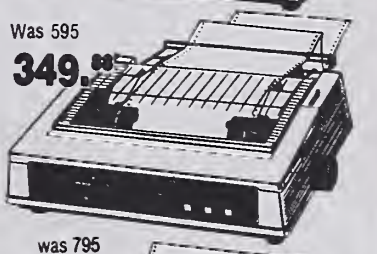
- 2K Buffer
- Plus All Features of the D-100
- Tractor Feed



D-300 Dot Matrix Printer was 795
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- 6 Pitches
- Built-In Dual Interface
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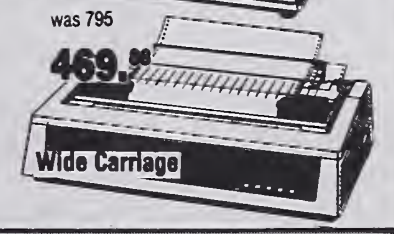

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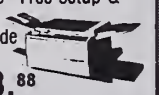

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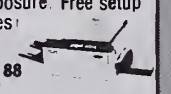

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Canon PC-20 Was 1095
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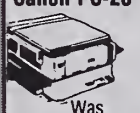

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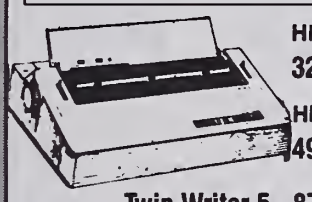

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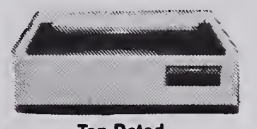

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Computer Business Ups And Downs

It's time again for the summertime blues. Apple complains that the computer business is coming apart. The popular press, computer/software makers, and many of the market research companies talk of the downturn in the computer industry. What does all this mean? Is the market really declining?

The answer is simple and yet complex at the same time. The computer industry is still one of the fastest growing industries and will continue to be well into the next century. Estimates run between 30 and 45% growth expected this year for the industry as a whole.

On the other hand, it has become a rough-and-tumble existence for some. Many of the big computer makers are still fighting to find their place in the market.

Apple Computer is one of the first that comes to mind. Apple has taken some gambles in the past that they are face to face with now, notably computer compatibility with IBM and becoming a business computer company. Both of these are big battles to fight. Apple is doing quite well when you consider that they not only are trying to become a business computer company but attempting to enter that market through another door.

Apple has suggested that its problems are due to the slump in the computer industry. I think this makes a convenient excuse for its reorganization, which will put Apple in a more competitive position.

Some of the IBM compatible computer makers are showing excellent growth. Compaq, a company which maintains that its machine is not compatible, but a standard in the industry, will probably be able to claim another record in sales this year. Tandy Corp., which has also made a solid entry into the compatible industry, is growing and expects a big year. It is probably time we quit calling these computers "compatible" and call them the standard operating system.

Tandy was one of the early runners in the home and business computer market. It has always been one of the dependable computer companies. The service is solid and the computer always does what it was advertised to do. In fact, as a business or engineering tool, Tandy's computer covered user needs better than any other manufacturer.

Now that Tandy has taken the compatible approach, it offers a dependable, reliable, and for most applications compatible computer at a reasonable price. An advantage that Tandy offers is that the company is likely to still be in the business five or ten years from now. Tandy supports equipment it sells longer than most companies are capable of doing. With many computers, support for your computer problems will be dependent on the dealer. Tandy employees support you when you have a problem with a Tandy product. No computer is completely compatible with IBM. Even IBM is not always compatible with its own computers! The system IBM started was an evolution from other Z80 based machines, but its machine has become a standard.

Software companies like Borland and Lotus are undergoing solid upward growth while other companies complain of a soft market.

The computer retailer is currently changing his stripes. Most of the stores I have visited are sending salesmen out into the field. No more sitting around and waiting for the customer to come to them. Retailers are after the schools, business, and anyone who is buying more than one system. Companies that don't understand what makes them stand out from the crowd, won't.

The computer industry has required good business sense, understanding of the market, and focus. Many companies, both hardware and software manufacturers, have not focused well or have entered the market with no obvious difference established between them and their competitors. The computer market was much like the real estate market used to be: an expanding pot of money seemed available for the taking. Many companies without a clear market path, leaped into the fray and have become lost.

AT&T has landed a big one — a contract to provide computers to the NSA. The *Wall Street Journal* said the total contract could go as high as 900 million dollars. That kind of money could put any company in the business permanently. AT&T may now be in a position to pose a serious threat to IBM dominance of the microcomputer industry. AT&T understood the market and went for a big fish, and what a haul they caught!

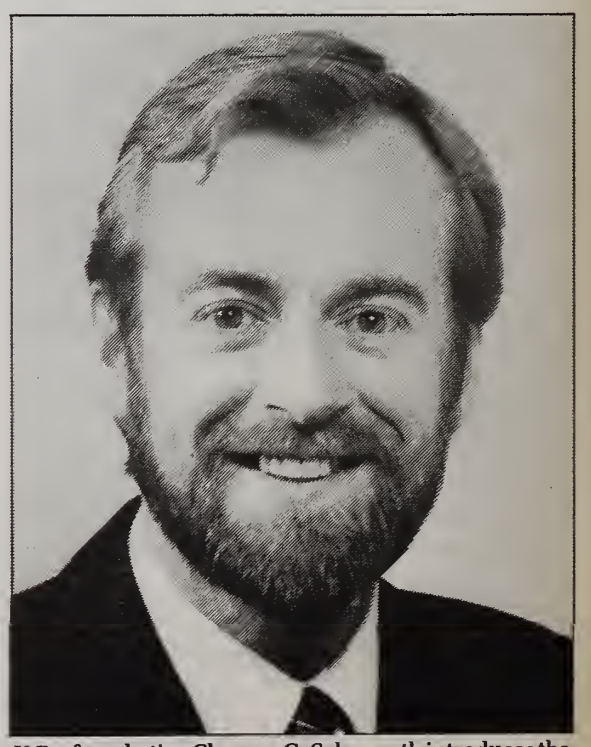
The bottom line is that the computer industry is still undergoing strong growth and will continue to in the future. For individual companies within the industry to share this growth they must follow well-thought-out, productive paths. They must not fool themselves with simple narrow market studies. Focus, productivity and a niche are the most important attributes of a computer hardware or software manufacturer.

Thorn EMI Introduces User-Friendly Software – For All Ages

Entering the microcomputer scene last fall, Thorn EMI Computer Software, Inc. introduced the 2.0 Perfect Software Series of integrated programs with business applications in mind. Less than a year later, this expanding software publisher-distributor has begun marketing a new Computer Clubhouse series and has announced two unique marketing arrangements involving the Perfect Software Series. These steps are important new directions for Thorn EMI Computer Software as well as industry firsts.

The first program in the new Computer Clubhouse Series is titled *Rainy Day Fun*. Geared to the home market, the product was designed for first-time computer users, especially youngsters ages 5 to 9. Operated with a joystick, this program takes up where video games leave off. Termed an activity program by its creators, *Rainy Day Fun* defies the strict categories of entertainment or educational software. According to Clem Scharwath, Vice President of Marketing and Program Development at Thorn EMI Computer Software, "We've combined variety, social interaction and use of the computer printer to make a unique and enticing product."

Rainy Day Fun consists of ten different play activities which a child can participate in along with friends. Examples of featured creative activities follow. "Mask Maker" offers users 36 different face graphics to be combined into masks, printed out, cut out and worn. There are more than 700 possible combinations, plus freehand designs. "Paper Airplane" provides ten different airplane designs which can be rotated on screen for 3-dimension viewing. Once a design is selected, it can be printed out, folded and flown.



V.P. of marketing Clemens G. Scharwath introduces the latest products in Thorn EMI's software line.

Some of the activities are computerized versions of old favorites, such as Pin The Tail On The Donkey (with visible and invisible donkeys on the screen, the game is played on musical cues) and Connect The Dots (with a choice of 40 pictures to

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LQ 1500	1295	918
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EDIT MODE

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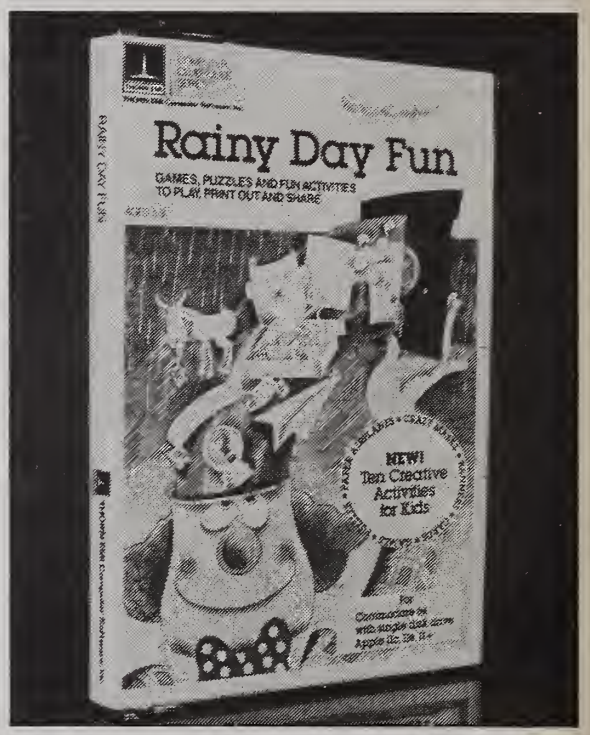
While a child is having hours of fun with these activities he is also acquiring simple skills such as operating a computer printer, selecting and using information and designing with geometrical shapes and patterns. This program can be used



Thorn EMI's software line covers a spectrum from serious business applications (*Perfect* Software) to games for Kids (*Rainy Day Fun*).

with the Commodore 64 and Apple IIe, IIc and II+. It's priced at $30.95. Additional programs in this series will follow.

The careful development process behind *Rainy Day Fun* demonstrates Thorn EMI's concern with the user's needs and preferences. In creating the design specifications for *Rainy Day Fun* an independent market research effort was conducted, asking a panel of consumers to evaluate various aspects of the program and explain what they liked or disliked about it. On the basis of this input, Thorn EMI Computer Software then refined their plans and worked closely with the software developer involved.

A similar analysis and fine tuning also went into developing the 2.0 Perfect Software Series.

EDIT MODE

Thorn EMI selected the programs by Perfect Software, Inc. and signed a licensing agreement to market this family of software, including *Perfect Writer*, *Perfect Speller* and *Perfect Thesaurus*, *Perfect Filer*, *Perfect Calc* and *Perfect Link* programs. Several enhancements were made before this product was placed on the market, such as pop-up menus, split screen and a common set of English language commands for the series. The objective of these enhancements was to provide ease of use with the IBM PC, PC-XT and PC-AT.

"Ease of use is intrinsic in our products," says Scharwath, who is responsible for both new PC software development and purchase or license of software products for the company. He also indicated that Thorn EMI's emphasis is on marketing programs that are substantially important to the end user, rather than just being different from others on the market.

Recently, Thorn EMI Computer Software and Commodore International signed a licensing agreement which enables Commodore to market the 2.0 Perfect Software products under the Commodore name as the exclusive word processing, information manager and spreadsheet programs for the new Commodore 128 PC. Commodore's choice of the Perfect Software family resulted from the product's features and capabilities, plus Thorn EMI's worldwide marketing resources, according to Scharwath. The company is part of the Information Technology Group of Thorn EMI, Inc., a London-based multi-national corporation with sales of over $4 billion.

Through another new marketing arrangement, the Perfect Software Series will enter the educational market in a unique form. Brief instructional versions of the *Perfect Writer* with *Perfect Speller*, *Perfect Thesaurus*, *Perfect Calc* and *Perfect Filer* programs are being included in a college level textbook entitled *Introduction To Computers With Software Applications*, by Wilson Price, published by CBS College Publishing and Holt, Reinhart & Winston.

This is the first use of commercially available business software in conjunction with a textbook. Several chapters that comprise the section on productivity software involve "hands-on" program operation assignments with the Perfect Software programs. "Contributing to the development of this textbook is one more step in our long-range plan to be a major participant in coursework at the college level," remarks Scharwath. Two other similar projects are planned in the future, he adds.

Growth has happened rapidly since Thorn EMI Computer Software was founded in 1983. The Orange County-based company which is the headquarters for Thorn EMI Software publication and distribution in the United States has been expanding its research and development staff and has just moved to a new larger facility.

— *Cynthia Slocum*

MicroTimes Industry Rumor Control

Notwithstanding rumors to the contrary, Lutzky Baird Associates (whose product, UltraOffice, allows the Macintosh Office to interface with Unix systems, as detailed last issue), has not been acquired by Ashton-Tate, publishers of such business-standard software as *dBase* and *Framework*.

Ashton-Tate had recently made Lutzky Baird a short-term loan to fund research on a possible joint project. However, David Lutzky, reached in his

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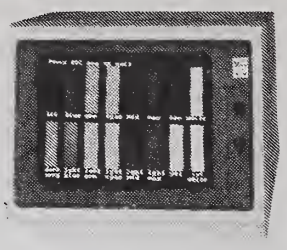

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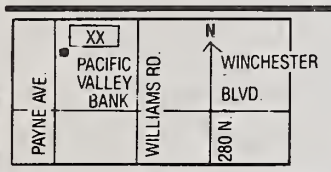

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EDIT MODE

office in Los Angeles on July 9, explained that while this unspecified joint project had been pursued, it had proved non-viable, through no fault of either company. Lutzky also denied vehemently that Ashton-Tate had acquired his company's assets or that there were any plans in the works for them to do so.

What does seem to be happening, on the other hand, is that effective almost immediately, Warner Communications is shutting down its Warner Software subsidiary, which has been performing less than pyrotechnically since the collapse of Warner's Atari division and its subsequent sale to Jack Tramiel.

Desk Organizer, Warner's flagship software package, showed lackluster sales figures despite price cuts from $250 to $99. The trend toward lower prices for business software, as exemplified by packages like Borland International's *Sidekick*, had a detrimental effect on market interest in the product.

Warner has also recently sold its interest in the game marketing company First Star Software and cancelled plans for co-publishing book/computer disk packages in conjunction with *List* magazine. This move, along with the transfer of Warner Software's book publishing program to Warner Books, has left the software division with no product. It may be shut down as early as August 1.

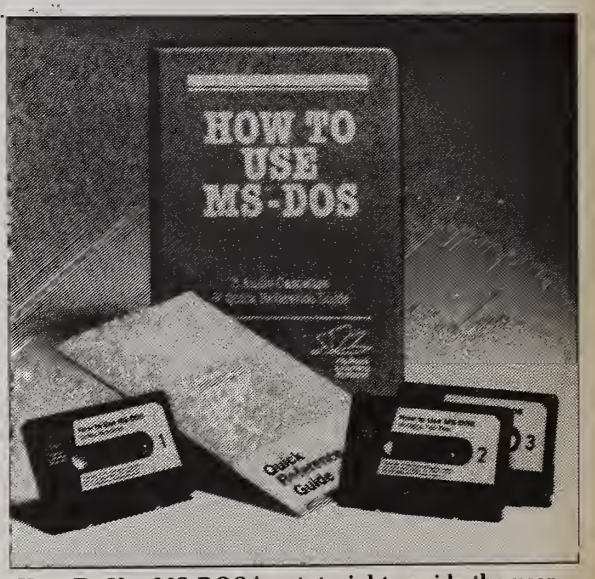
— Mary Eisenhart

IN RECEIVING

MS-DOS Course

With training being one of the high expense areas associated with computer purchase for a company, new training courses are of great interest to many. The following program study was of interest to me.

The user is led through the course by a conversational tone; the teacher on the tape talks the learner through basic procedures. While listening to the tape, the student operates the computer in



How To Use MS-DOS **is a tutorial to guide the user through the operating system.**

a "learn-by-doing" format. All the system's essential capabilities are taught in three audio cassette lessons of about two hours each.

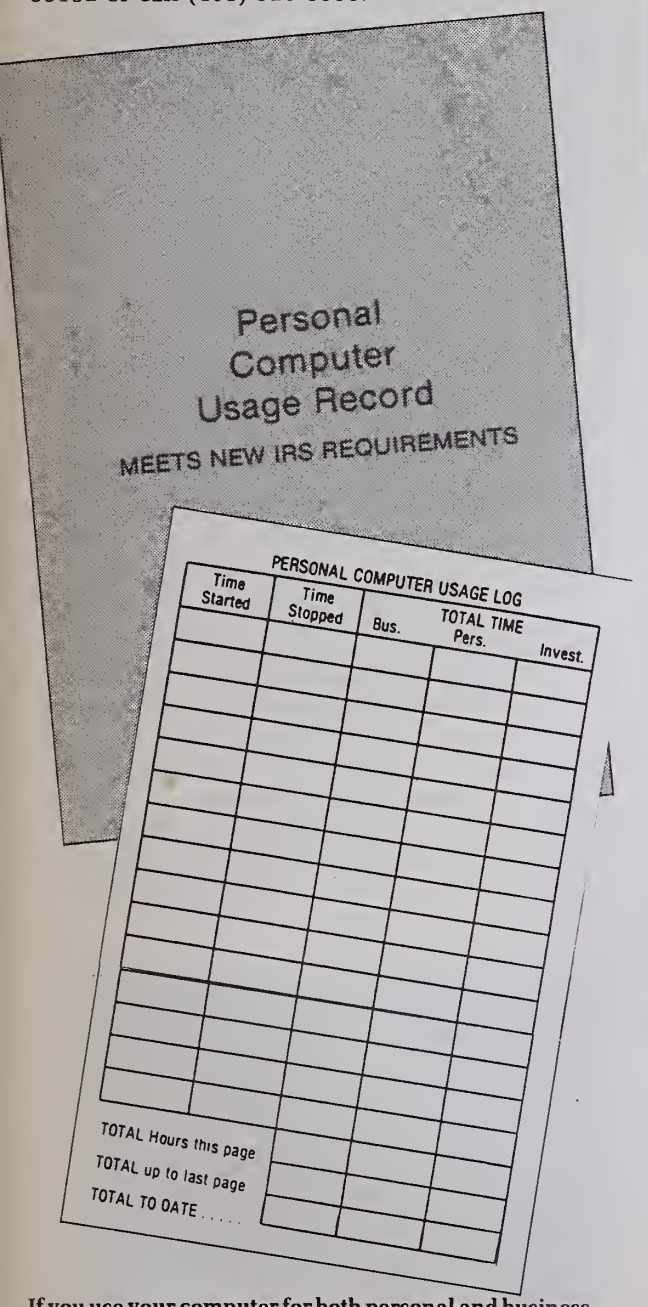
Fast learners may flip the tape to pursue special interest topics or obtain more in-depth instruction at other designated points in the lessons.

For more information about the course, write or call FlipTrack Learning Systems, 999 N. Main St., Glen Ellyn, IL 60137. Phone 800-222-FLIP. (In Illinois, call (312) 790-1117.)

EDIT MODE

Tax Help Richard C. Foley, a tax preparer, sent us a book for logging microcomputer use time in order to comply with the 1984 Federal Tax Act. Foley devised the book in order to help his clients. The book is a handy 4 x 6 inches, and is available for $2.50.

For more information call or write Richard C. Foley, 1440 Japaul Lane, San Jose, California 95132 or call (408) 926-6993.



If you use your computer for both personal and business purposes, the Personal Computer Usage Record meets IRS requirements for keeping track of tax-deductible business use.

Carriers At War Now available for the C-64. This game is without a doubt the finest naval war game on the market. The C-64 version has better graphics than the Apple II version, but the game plays the same. If you recall, this is the game that can be played solitaire or with teams. Two people can play on the same side or on opposite sides. The computer will play whichever positions are not played by a human opponent. It also has "a construct your own scenario" option for a recreation of any battle that took place during WWII or your own hypothetical encounters.

For more information contact John Gleason, Strategic Studies Group, 1747 Orleans Ct., Walnut Creek, CA 94598, (415) 932-3019. Our apologies for not including John's name and address on the first article. We had a lot of calls regarding this game, so we are using the release of the C-64 version as a convenient opportunity to include the address and phone number.

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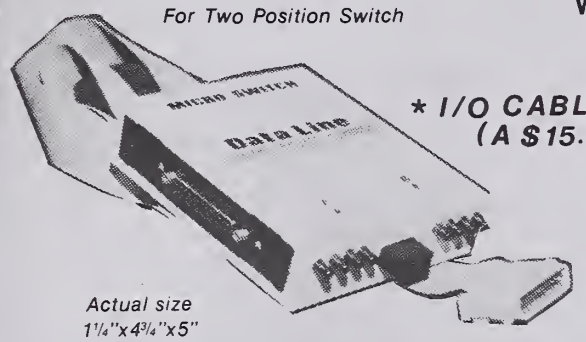

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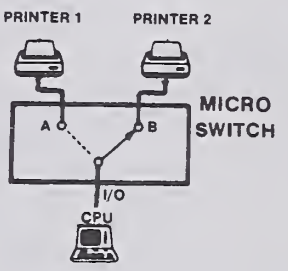

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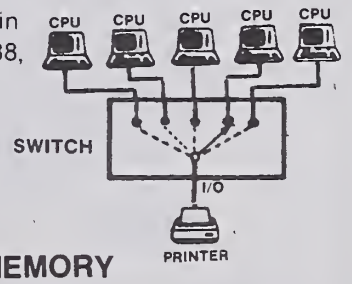

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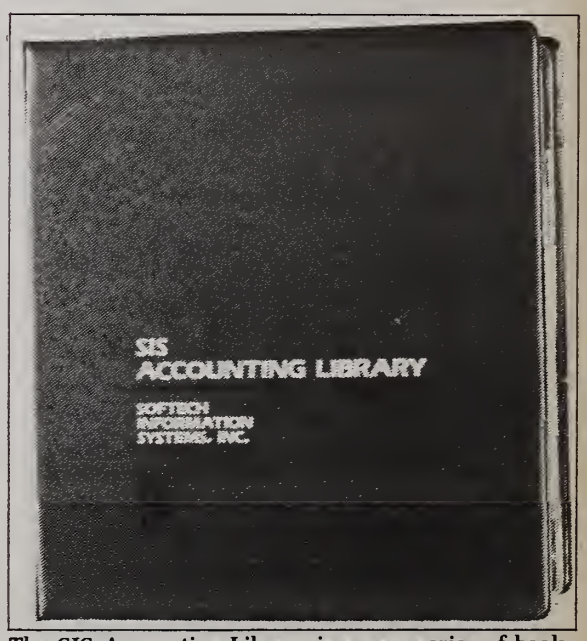
Broderbund's Disk 2 from the Print Shop Graphics Library gives users of *The Print Shop* more graphics options.

Print Shop Graphics

This disk has new categories: Jobs, Hobbies, People, Places, Travel and Health. Disk Two includes images as diverse as a portrait of George Washington, a San Francisco cable car, a handyman's tools and a DNA strand. The program includes a variety of typefaces, borders and graphic images, and also lets users modify existing graphics or design their own original images.

For more information, contact Broderbund Software, 17 Paul Drive, San Rafael, CA 94903-2101, (415) 479-1170.



The SIS Accounting Library is a new series of bookkeeping software for MS-DOS and PC-DOS operating systems.

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Softech Information Systems of Mill Valley has a new, fully integrated accounting package for MS-DOS and PC-DOS. Titles in the series are General Ledger, Sales Ordering, Accounts Receivable, Accounts Payable, Purchase Orders, and Payroll. Packages are available individually for $195 to $495, depending on title, and designed for ease of use — the programs allow for display of data on the screen while posting. Softech Information Systems, 20 Sunnyside Ave., Mill Valley, CA 94941. (415) 381-1011. □

"An important new metaphor from the author of the best book on user interface design."
—Alan Kay,
Apple Fellow, Apple Computer

SNEAK PREVIEW
of a powerful
NEW SOFTWARE METAPHOR
WANTED: People with Imagination, an IBM PC, and $59.95.

by Paul Heckel President, QuickView Systems and author, *Elements of Friendly Software Design*

Rarely does a software product introduce a new conceptual metaphor. VisiCalc introduced the electronic spreadsheet; Thinktank, the electronic outliner; and now *Zoomracks*, the electronic rack. Let me tell you what electronic racks are, why I think they are important, and how you can get to try them risk-free at a savings now and maybe help shape their final form to your liking.

New Metaphor:
Originally designed to keep track of lists, names and addresses, appointments, notes, and other information on portable computers, electronic racks provide a simple, consistent and rich organizational metaphor for data base, text, and other applications.

Zoomracks starts with something familiar: racks—like those filled with time cards next to time clocks in factories. You can see the first line of each card, and take out a card to look at it in detail. You expect the cards in a rack to be in order, several racks to be next to each other; and to be able to move cards from one rack to another.

You might put names and addresses in one, appointments in a second, notes in a third, sales orders in a fourth, memos in a fifth, and archived appointments or notes (moved or copied from the second or third rack) in a sixth rack. To do something with Zoomracks, first ask yourself: "How could I do it with cards in racks?"

Windows illuminate like a flashlight in a dark room
Racks are displayed with Smart Zooms. While windows sacrifice the big picture to let you see the detail, Smart Zooms squeeze out the detail to always show you a recognizable big picture—whether a long shot of several racks, a closeup of one rack, or an extreme closeup of a single card.

One time offer for
If you like to stretch new products and influence their final form, we want your feedback. We are making a one time offer of a Sneak Preview Edition of Zoomracks at an affordable price so you can try it and give us your feedback in time to make a difference before we officially introduce Zoomracks in November.

ZOOMRACKS SPECIFICATIONS:
- Copy and move fields, cards, and text into different fields, cards and racks.
- Define and change card templates.
- ASCII MS/DOS file format for conversion to other data formats.
- Utilities to convert DBASE II files.
- Macros.
- Simple Wordstar-like editor.
- Easy to learn and easy to use for both occasional and frequent users.
- Display sizes: 6 x 25 to 25 x 80.
- 8 racks on screen, in memory; 30 fields/card; 80 characters/line; 250 lines/field, 20,000 cards/rack.
- Runs on 256K IBM PC.

The Wide key (function f1) toggles between displaying the working racks (left two screens) and the current rack full (right two screens). Smart Zooms compress out detail to keep the big picture.

The Yank key (function f2) toggles between displaying the first lines of cards in racks (top two screens), and the current card (bottom two screens). In these pictures Zoomracks is using a 10 by 60 screen.

Before developing Zoomracks, Paul Heckel studied what made VisiCalc and other software powerful, useful, easy to use, and successful. He crystallized his thoughts in a book. This is what people are saying about this book, *The Elements of Friendly Software Design:*

"It is the first computing book I've ever read nonstop from cover to cover . . . one of the few books I've read on any topic that actually delivers what it promises . . ."
—Dave Bunnell, PC World Publisher

"Entertaining and instructional . . . will affect the way I program from now on."
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—Robert Burton, President, Rolodex

The Elements of Friendly Software Design is available at your local bookstore for $8.95 or by calling 800-443-0100 EXT 341. You can also order by writing QUICKVIEW SYSTEMS, 146 Main St., Suite 404, Los Altos, CA 94022. Add an additional $2.50 for postage and handling. Payment must accompany order.

What you get for $59.95
- The Sneak Preview edition of Zoomracks;
- A free upgrade to the first run edition of Zoomracks;
- An acknowledgement in the user manual *if* you are the *first* to suggest an improvement we use;
- A six-month unconditional moneyback guarantee.

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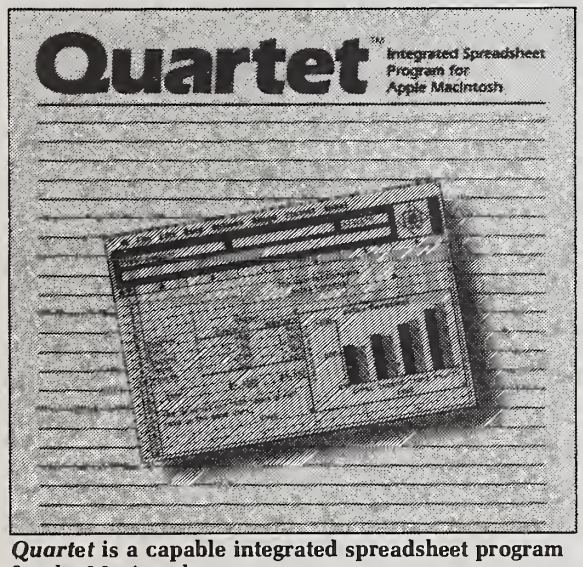
SPREADSHEETS

Quartet

Published by: *Haba Systems*
Program by: *Man Chor Ko, Scott Jenson, Brian Dodd*
For: *Apple Macintosh*
Price: *$199.95*
Reviewed by: *Steve Cummings*

Haba Systems bills *Quartet* as an "integrated spreadsheet." Once you've worked with the program, you'll comprehend this nebulous description better. *Quartet* is a very capable spreadsheet for the Macintosh, and it has useful text, graphics, and data management accessory functions, but don't expect to rely on it for your business graphics, word processing, or data base needs.

Quartet's spreadsheet offers the features of any good garden-variety program of this type, with enhancements made possible by the Macintosh. Spreadsheet size is a maximum of 62 columns by 999 rows. Depending on the type of entries you



***Quartet* is a capable integrated spreadsheet program for the Macintosh.**

make and whether you're using the graphics function, a 128K Macintosh can handle data in 1000 to 2000 cells, and a 512K computer can hold values for 15 – 20,000 cells.

Program commands offer a variety of simple and sometimes novel ways to move around in the spreadsheet and select cells you want to work on. A "diamond control" graphic in the upper right of the screen lets you use the mouse to move the screen window across the spreadsheet vertically, horizontally, or diagonally by single spaces or screen pages (scrolling is a little slow). Another mouse-based command lets you define and jump back and forth between two display windows. You can position any cell in the top left corner of the window with a keyboard command, or create a split screen to see two parts of the spreadsheet (you can't open a separate file in the second window). The simplest method for selecting the cells you want to edit is simply to drag the mouse pointer over them. If you want to select a group of cells that extends outside the screen you're currently viewing, you just click on the top-left and bottom-right cells in the group. You can also select an entire column or row by clicking over its label on the perimeter of the spreadsheet.

Commands for entering and editing data, formulas, or text are mostly standard spreadsheet fare, but here, too, the authors take advantage of the Macintosh to make your work easier. To insert a cell reference into a formula, for example, you simply click over the cell (you can type in the cell name if you prefer). You can cut, paste, copy, or erase the contents of single cells or whole areas; a mouse-driven command lets you quickly replicate the contents of a cell to a selected range of adjacent cells. You can add to or multiply the values in a range of cells by values from another group of cells or by a constant. Cells can be set up to display data in scientific, currency, percentage, date, or ordinary formats.

The program provides a workable though somewhat limited selection of functions for calculation and logical operations on cell data. You can determine the absolute value of a cell entry, or the maximum, minimum, or average values over a given range. You can also calculate square roots and exponential values. A useful group of financial functions based on the Hewlett Packard convention is included, such as future value, internal rate of return, present value and net present value, loan payment for a given interest rate and term, and so on. Finally, a set of logical and lookup functions let you test cell values using operators of comparison and check data tables in your spreadsheet. You can have the program perform calculations by row or column priority, and it can be set to automatically perform multiple iterations when you've entered complex formulas. The program recalculates the entire spreadsheet every time an entry is changed, but you can turn off this feature to save time when making large-scale changes.

Quartet makes good-looking graphs from spreadsheet data very quickly, but it's easy to run into the limitations of this part of the program. Your graph can be set up in the bar, line, or pie format. You're only allowed four sets of data on a single graph; this is probably a good compromise, but what happens if you want to compare the productivity of five salespeople? Each data set displayed on the graph must be in adjacent cells of the spreadsheet — you'll have to plan your layout carefully ahead of time or you may be faced with substantial editing before you can set up the graph the way you want it. You do get options to assign labels and create legends, and you can move or resize the graph at any time.

The text editing feature of *Quartet* is not a separate word processing mode, but simply lets you define text fields within the spreadsheet for longer titles or comments than you'd be able to produce with other programs. You're limited to 1000 characters in any text area, and the only editing commands available are the standard Macintosh mouse cursor control and cut/paste. You can right, left, or center justify text. You could define full pages as text areas for quick memos while you're using the program, but I doubt you'll want to use *Quartet* for anything more involved.

Likewise, *Quartet* can't be seriously considered as a data base management program, but it can sort spreadsheet entries alphabetically and by numeric value. The program looks at rows as records and columns as fields. You select primary and secondary fields for the sort, and each sort can be performed in ascending or descending order. This can be useful for alphabetizing a customer list or for arranging a record of sales by date. But the sorts always act on the entire file, and you can't search for a particular text entry or have the program locate records that match a range of criteria.

Consider *Quartet*'s graphics, text, and data management functions as extras you get with a well-implemented Macintosh spreadsheet. When you can use these extras, your reports will look better and be better organized, but when you encounter their limitations, the program will still deliver excellent spreadsheet performance.

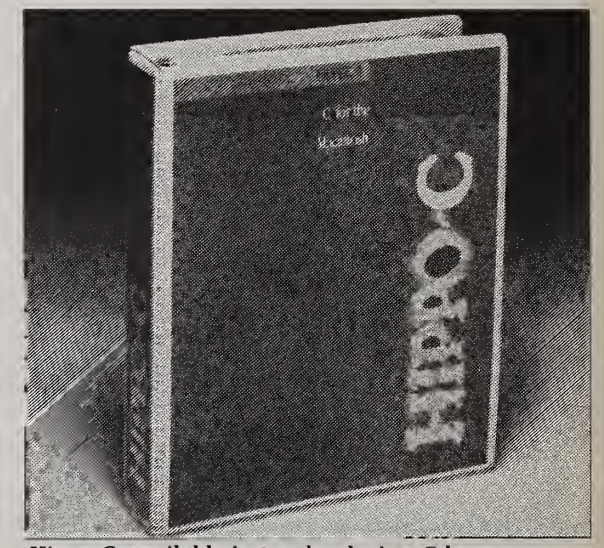
PROGRAMMING/COMPILERS

Hippo C

Published by: *Hippopotamus Software*
For: *Macintosh*
Suggested retail: *Level 1 $149.95; Level 2 $399.95. Non-copy-protected version available for additional $25.00 each.*
Reviewed by: *Carter K. George*

Hippo C by Hippopotamus Software is a new "C" compiler for the Apple Macintosh computer. *Hippo C* is a fairly full featured C compiler that includes functions designed for both the newcomer to C and for the experienced C programmer.

In working with *Hippo C*, I was struck by the fact that C is really *the* language to know in today's computer world. C, of course, is closely associated with the Unix operating system, a powerful multi-user operating system found on machines ranging from the IBM PC/AT to the Amdahl UTX, a monstrous supercomputer.



***Hippo C*, available in two levels, is a C language compiler for the Macintosh.**

C, however, is hardly limited to the Unix world. There are a number of C compilers available for MS-DOS personal computers, and for other hardware as diverse as DEC/VMS minicomputers and IBM mainframes. With *Hippo C*, there are now at least two C compilers for the Macintosh that I know of (the other being *Aztec C*).

Hippo C is an excellent package that manages to please both the individual who is looking for a compiler to write Macintosh programs with and the Unix programmer who happens to have a Macintosh at his or her disposal.

There are two ways to work with *Hippo C*. If you are primarily a Macintosh user, *Hippo C* can be accessed entirely through the pull-down menus used by most Mac applications. On the other hand, if you are an old hand at C programming from the Unix world, *Hippo C* comes with its own Unix-like operating system.

The Hippo Operating System (HOS) gives the programmer what resembles a Unix shell. You can type in commands to copy, remove, or compile files. Most of the commands have the same names that they do in Unix, although some of them function slightly differently. Here is a quick summary of what the Hippo Operating System offers:

as	assemble a file
cat	print a file on the screen
cc	compile a file with *Hippo C*
chmod	change the permissions on a file
cp	copy a file
ld	the link editor

PROGRAMMING/COMPILERS

mv	move a file (change its name)
od	print an octal dump of a file
rm	remove a file
touch	change a file's access time
wc	count the words in a file

Finally, the best feature extracted from the Unix world is the *make* facility. *Hippo C*'s *make*, a scaled-down version of Unix *make*, allows you to specify the relationships between different files. Say, for example, a program depends on several files. You can tell *make* once how all the files interrelate. From then on, *make* will "make" your program for you, putting all the parts together, and keeping track of which parts need to be re-compiled after changes and which don't.

Whether you use the Unix-like HOS or the normal set of well-organized pull-down menus, *Hippo C* provides the Mac programmer with a full set of tools to write applications for the Macintosh.

Hippo C, I should mention, comes in two levels. Level 1 gives you all of the basic C programming language. It is good for learning C, and for writing quite a bit of useful code. Level 2, at some extra cost, is a full-blown C programming development environment for the Macintosh. (Level 2 also includes more Unix utilities, such as *ar*, *cmp*, *grep*, *head*, *tail*, *sort*, *split*, and a utility that converts Hippo editor files to *MacWrite* format and vice versa.)

Programming tools for Mac applications include C library calls to the Macintosh Toolbox and to Quickdraw routines. You have at your fingertips all you need to create applications that make use of their own pull-down menus and Macintosh windows. Mind you, the *Hippo C* documentation does not necessarily tell you how to do this (the *Hippo C* manual recommends that you read the book "Inside the Apple Macintosh"), but it does give you what you need to do it.

Hippo C is not without some limitations. The most obvious problem spot is floating point support. Level 1 *Hippo C* does not allow you to declare variables with types "float" or "double." In Level 2 the situation is somewhat better, but you still have to make it to Chapter 11 of the manual to find out about the floating point library. (When you do read chapter 11, you find that you have to use a header file and some non-standard type declarator to access the Mac floating point routines.)

Another problem is that using Level 2 requires two disks. If you don't have an external disk—like yours truly — then you find yourself having to switch disks in order to be able to use the added features that Level 2 offers.

Finally there is the speed issue. The speed of the *Hippo C* compiler is not really a limitation, but more a matter of perception. If you are used to microcomputer C compilers, *Hippo C* is not bad at all. If you are used to working on large, lightly loaded Unix systems, then it might seem a bit slow. Most small to medium sized programs compile in under a minute.

The *Hippo C* documentation is clear and straightforward: I give it an A−. If you have ever tried to read the manuals for *Lattice C* or *Microsoft C*, this will be like a breath of fresh jargon.

Hippo C also comes with an on-line tutorial. As tutorials go it is fair, and it has the advantage of being removable if you need the memory space.

Hippo C is one of the better, more consistent serious programming products I have used on the Macintosh. I especially recommend it for anyone learning C. At the same time, experienced C programmers from the Unix world will also enjoy working with this product if they don't have a 68000 Unix-based cross compiler at their disposal.

Oasis Programming Software For The C-64

For: *Commodore 64*
Price: *Basic Lightning $39.95; White Lightning $49.95; Machine Lightning $89.95*
Reviewed by: *Matthew Leeds*

The Commodore 64 is the most powerful sound and graphics computer in its price range. Sixteen colors on the screen, 8 moveable objects (called sprites) on-screen at the same time, and 3 voice (plus percussion) sound make it an excellent choice for any programmer's efforts. It doesn't hurt that there are more Commodore computers in homes than Apple and IBM combined. This makes the Commodore market very attractive to the commercial programmer. However, the 64 is not an easy computer to program on. Its BASIC does not have any commands for directly accessing its great graphics and sound. Just to play a single note can take a half dozen lines of code. To do a commercial level game with 3D graphics and multi-voiced music can be a programmer's nightmare.

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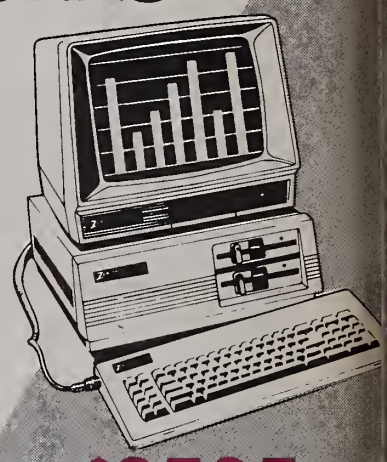

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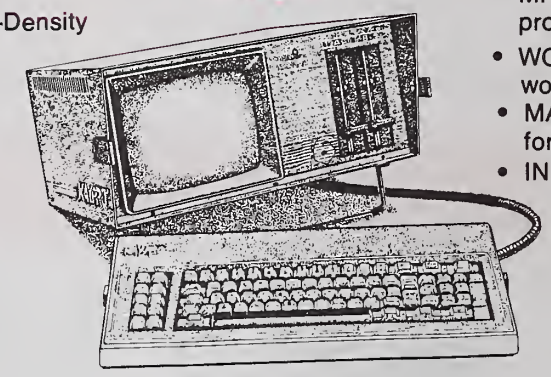

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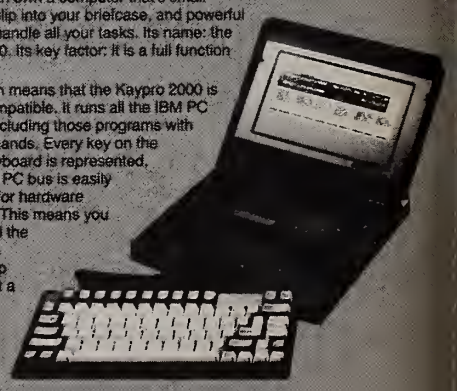

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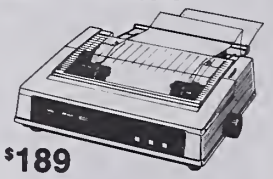

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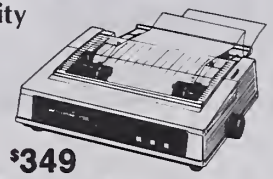

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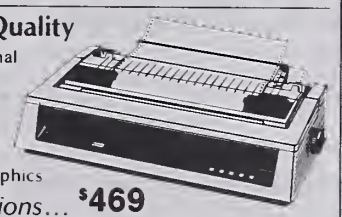

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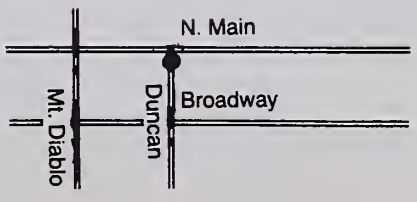

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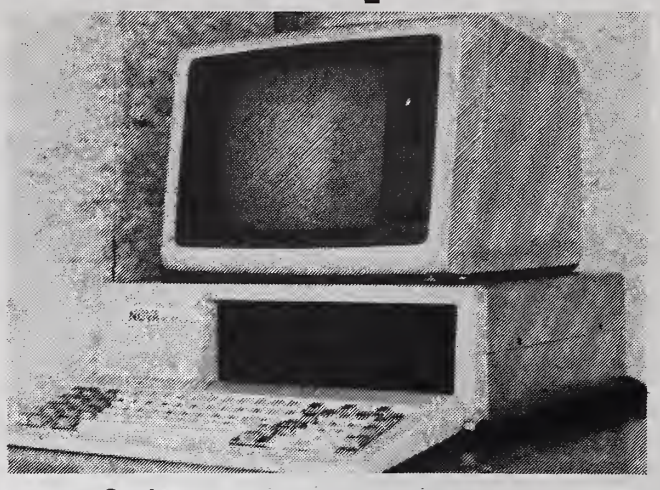

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PROGRAMMING/COMPILERS

task of programming on the Commodore easier: *Basic Lightning*, *White Lightning*, and *Machine Lightning*. *Basic Lightning* is an extension to Commodore BASIC that adds over 200 additional commands, most for game writing. *White Lightning* is a FIG FORTH based development language with a compiler for stand-alone finished programs. *Machine Lightning* is an assembler/monitor/disassembler combination for programming in machine code on the 64.

Basic Lightning is a powerful BASIC extension for the Commodore 64. It allows multi-tasking of up to five events concurrently; one in foreground and four in background. Hi-res and multicolor graphics are accessible with a single command. Up to 255 additional sprites may be defined. These may be several screens in width, and can be scrolled, spun, mirrored, enlarged or inverted at high speed and with variable smooth-scrolling. GOTO's and GOSUB's may be replaced by procedures and PASCAL type structured programming.

Programming commands in *Basic Lightning* include: if-then-else, repeat-until, exit (used to exit a repeat-until without corrupting the stack), and procedure naming; this allows the passing of variables from one procedure to another, including defining an array as a variable to be passed. Some of the Graphics commands include: window (creates a hi-res window), draw (point to point), box, and over 50 different commands for controlling sprites. Sound commands include: volume, frequency, ADSR, waveform commands, and commands for using the filters, ring modulation, and synchronization.

There is also a full function sprite generator and editor. This allows for the creation of multi-screen sprites, and can be used to develop animation routines.

Basic Lightning is an extremely full-featured development package. As a consequence, it is not simple to use. Effectively it is a new programming language, and you should expect to spend some time learning how to use it efficiently. Oasis Software will be marketing a compiler for programs written in *Basic Lightning*. This will allow for the creation of stand-alone programs that can be marketed with no royalties or license fees requred. For those of you who do not want to wait for the compiler, you can use the more advanced *White Lightning*.

White Lightning contains all of the functions of *Basic Lightning*, the sprite editor, and also contains a FIG FORTH based graphics development language. FORTH is a high level language with an interactive interpreter. It uses Reverse Polish Notation, and integer arithmetic with up to 32 digit precision. *White Lightning*'s FORTH has over 100 extensions to the standard FORTH vocabulary. It also has the ability to execute lines of standard Commodore BASIC from within the FORTH based *White Lightning*. This can ease the transition from BASIC to FORTH. You can also add your own defined words to extend the vocabulary and construct a customized programming environment. Once again this package is intended for those willing to invest the time required to learn a new programming language, and I would recommend it for those that have already worked in FORTH.

The third package in the Lightning set is *Machine Lightning*. It contains *Basic Lightning* and the sprite generator, **64-MAC/MON** and a graphics sub-routine library.

64-MAC/MON includes a line editor for creating source text, a two-pass macro assembler, a symbolic disassembler, a monitor, and a trace function.

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PROGRAMMING/COMPILERS

The editor checks syntax as lines are keyed in, and allows for block moves, search and replace, and line numbering. The assembler has conditional assembly, cross-referencing, disk file linking-assembly, and a printer pagination facility. The trace function can single step, display register contents and program counter, or full run trace. Two versions of 64-MAC/MON are supplied, one in high memory and one in low memory.

The graphics sub-routine library consists of 10K of machine code for manipulating sprites. These are the same routines that are in *Basic Lightning* and *White Lightning*, but saved as ML code. Each is fully commented in a printed disassembly, and can be used to scroll, spin, enlarge, and move sprites. Collision detection and parameter passing is also supported.

If I were to find any fault with any of these packages it would be the lack of a comprehensive tutorial. You will need to spend quite a bit of time to become familiar with the working of any of these development packages. They are priced as follows: *Basic Lightning* $39.95; *White Lightning* $49.95; *Machine Lightning* $89.95. These are list prices, and are likely to be discounted soon. For more information contact: Oasis Software, 377 Oyster Point Blvd., Unit 15, S. San Francisco, CA 94080, (415) 588-1587.

WORD PROCESSORS

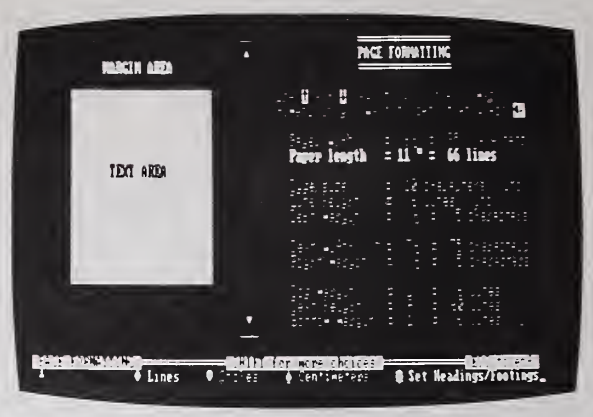
Wordvision

Published by: *Bruce & James Publishers*
For: *IBM-PC and compatibles*
Suggested retail: *$49.95*
Reviewed by: *Ken Goehner*

Allow me to tell you a story that has been floating around the advertising industry for a couple of years. It concerns a distiller of spirits who had a hard time marketing his product. He tried fancy bottles, fancy labels, fancy advertising. He lowered his price. Nothing worked. Finally he hired an advertising agency. The account executive laughed and immediately quadrupled the product's price. He then advertised the product as the most expensive scotch on the market. Sales have been up ever since. So much for public perception and opinion.

Bruce & James Program Publishers Inc. have a similar problem. They are the proud publishers of the best word processor I've ever seen for the IBM and compatibles, and they're selling it for $49.95. *WordStar* is sick in comparison. You can learn the rudiments of *WordVision* in about five minutes, and when you require higher functions there they are, on board. It may take the uninitiated two or three hours to learn the entire system, but that's nothing compared to the two or three weeks it takes to train someone on *WordStar* or any of the other so called "industry standard" word processors.

If any of you gentle readers have been following my work in *MicroTimes* you have probably noted that I deal pretty much in the Apple realm. I can DIR with the best of 'em, but somehow Big Blue makes me break out in hives. At any rate, this program has me looking at IBM clones again. I have never seen a friendlier word processing program capable of handling my needs as a writer, advertising consultant, and CEO of my own company. If you are living in an IBM or suitable clone environment, I strongly suggest that you check out this program. It is easy to use, inexpensive, and in association with the *WordVision* Powerpacks (soon to be available), it is a most formidable package.



***WordVision* is a low-priced word processing program for IBM compatibles that retails for $49.95 and rivals the high-priced industry standards.**

WordVision combines the ease of use of the *Bank Street Writer* (Broderbund) and *MacWrite* (Apple Macintosh) with the sophistication of a complete editing system.

In addition to the standard word processor functions, *WordVision* has a number of special features that will endear it to the end-user. To start with, the documentation is lucid and is displayed in a "stand up" format: after you remove the software from the package, you can set up the manual like a rolodex and access whatever you need to know without fiddling around with the screen or consulting a manual that has all the agreeability of a post-war basilisk. The command chain is set up as an icon driven menu system. To go from one menu to another is a simple matter of pressing the right function key; to select the feature you wish to implement requires another keystroke. All major command keys are supplied with labels that you can stick onto the keyboard to facilitate quick reference to *WordVision* functions. Each label carries your computer's standard key legends so you can use other programs without confusion. There is an on-board help section that can be summoned up from anywhere within the program in the unlikely event that you do not understand or have trouble implementing a selected option.

WordVision is forgiving; you really have to make a conscious effort to erase or lose a document. If you so opt, you can tell the program to automatically save, or sound a chime to remind you to save, your work every couple of minutes. There is an Undo function that allows you to amend your amendments, an Excerpt function that allows you to either move or copy blocks of type to any other part of your document, and a feature called Swap that is unique to *WordVision*. Swap allows you to transpose sentences, words, or letters in a specified field — e.g., "teh" can be changed to "the" with a minimum of effort.

WordVision is not just a word processor, either. It is the only program of my experience capable of word processing as well as writing and editing DOS files. The advantages of the editing features of a full blown word processor in the programming arena should be obvious to any late night code writers who have found the right strings in the wrong subroutine . . .

WordVision was conceived of as a basic word processor with expanded options available to the user in the form of add on programs called "Power Packs." The underlying concept was to allow the individual user to customize their system for their personal use at the lowest possible cost. For example, *WordVision* supports the industry standard printers. If you own a different printer, e.g. a LaserJet, Epson FX, Okidata, Star Gemini, or TI555, then you will want the Printer Power Pack, a driver package that is available now for $19.95. Soon to be released are a spelling checker and a formatting program that will simplify the process of footnoting, creating a table of contents, and facilitating simple mail merge functions.

Despite Bruce & James Program Publishers, Inc.'s low prices and low profile, *WordVision* has been gaining acclaim and support from a wide range of government, industry, and educational agencies from all over the country. Users cite reasons from ease of use to excellent service to reasonable prices for their enthusiasm for the program, and employ the same criteria for sweeping denunciations and outright ridicule of such programs as *WordStar*, *Finalword*, and *MultiMate*.

Further information on *WordVision* can be obtained by calling or writing Bruce & James Program Publishers, Inc., 2355 Leavenworth St., Suite #103, San Francisco, CA 94133, (415) 775-8400, in CA (800) 368-7600, ext. 2050, USA (800) 543-6277, ext. 2050, MCI Mail address: Wordvision.

DATA BASE MANAGERS

VersaForm

Published by: *Applied Software Technology*
For: *IBM, Apple, Wang, TI and DEC*
Reviewed by: *Doug Pencille*

Many small businesses have taken a big step into the computer age and find that they are not saving the time, money or paper they were supposed to. One common reason is that they are using a data base for keeping some records and spreadsheets for others, and have a word processor to type the computed results onto one neat report. *VersaForm* has a solution for the small business that keeps track of transactions on one or more forms. The *VersaForm XL* package is a complete data base, spreadsheet and report generator software system. The program uses a linking process between each of the files or forms so that all information is integrated throughout all data entry and reporting procedures.

The operation of *VersaForm* is quite simple from the operating view-point. Simply start out with all of the existing forms of the business (invoices, billing, estimates, etc.) and copy them onto the screen. For some types of business this has been done by *VersaForm* in the template package. After the form has been transferred to the screen, data are entered and stored in the data base. At the end of the entry session the data may then be printed out onto the company's existing forms. From the data, the user may produce any type of report using the information stored in the data base.

If this sounds all too simple, well, it probably is. The package provided to us by Advance Software Systems was only a demo disk and we could not take a real test flight. However, from the literature provided, *VersaForm* looks to be quite the system for many small business applications. Many of the pre-programmed packages available are tailored for medical, financial, retail, manufacturing, construction and insurance type operations. Some available packages are a medical insurance claim form package, job costing of labor and materials for construction, purchase order tracking and logging, and stock brokerage daily sales ticket journals. Templates are available to do invoicing, purchasing, cash receipts journals, mailing lists and job costing.

With the data base, internal spread sheet and report generation capability, *VersaForm* seems to be well suited for the company that wants to simplify its paper flow, keep accurate records and produce customized printed documents. □

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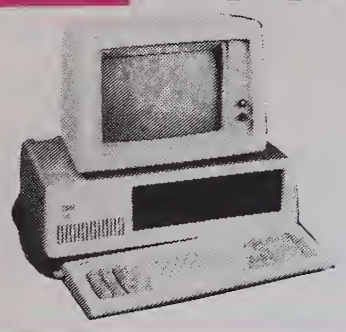

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Apple Regroups

By Mary Eisenhart

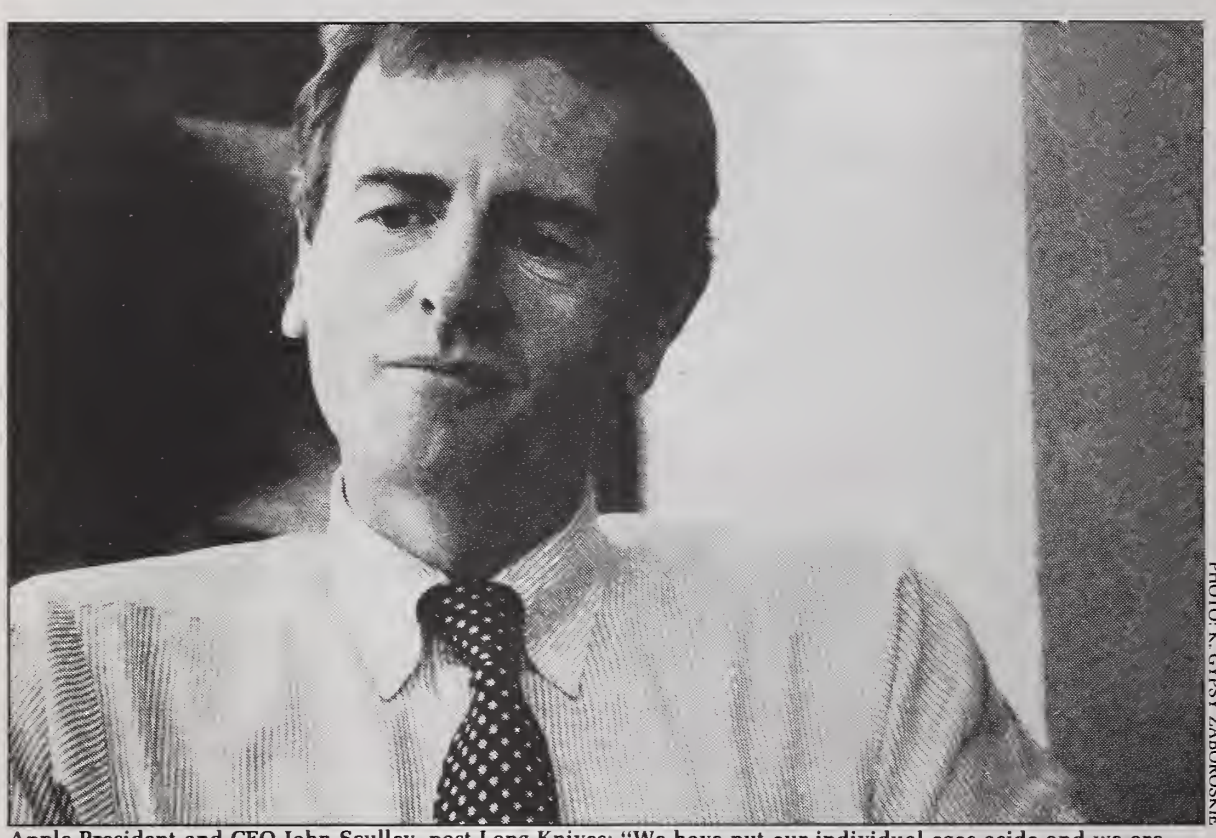

PHOTO: K. GYPSY ZAGROSKIE

Apple President and CEO John Sculley, post-Long Knives: "We have put our individual egos aside and we are putting teamwork in its place."

Last month's Night of the Long Knives left Apple Computer in what looked to the outside world like a state of chaos, with sole remaining co-founder Steve Jobs deposed and numerous employees suddenly out of work. Amid rampant speculation that catastrophes ranging from collapse to corporate takeover awaited the company, Apple itself was maintaining silence.

On June 26, President and CEO John Sculley, who had initiated the reorganization, spoke to the MacForum conference in San Francisco. His remarks provided the first official statement to emanate from Apple since the changes took place; while he left the conference without answering questions from the floor, thereby causing his remarks to fuel a whole new round of rumors, some things were quite clear. It's evident that Apple has unequivocally evolved past its garage days of anarchic genius, that Sculley is determined to make the company take its place among efficiently run corporations, and that he intends to accomplish this goal by abandoning much of Apple's former insularity and by improving relationships with dealers and third party developers.

The reorganization of the company was prompted, he said, not merely by the need to reduce Apple's operating expenses but to sharpen the focus of its management strategies and boost a company-wide sense of accountability. "A functional organization in a Fortune 500 company as large and complex as Apple is today requires a level of management experience and a degree of process that is usually not found or needed in smaller entrepreneurial companies," Sculley said. "Since the beginning of 1985 I have been consolidating operations, identifying the most experienced managers inside Apple and reaching to the outside for new managers capable of effectively working in a more disciplined process-driven organization."

Sculley discounted the notion that this transition to a more conventional corporate structure would cause Apple to become just another bureaucracy in which creativity is stifled. "I believe," he maintained, "that consistent and more sharply defined strategies and policies, a more experienced middle management team, and a more disciplined environment will actually *help* us get innovative things done quickly and effectively."

He stressed that the next few months will find Apple channeling its marketing efforts into a strong commitment to its dealer base. Effective July 1st, he said, Apple would focus its selling endeavors primarily on its dealers, thereby reducing conflicts caused by the company's dual marketing through dealers and direct sales; he said, however, that Apple would continue to honor contractual agreements still in place, and that selected large accounts would continue to receive direct service. As part of this campaign, he said, Apple would work with dealers to improve their ability to sell to business.

Also due for reorganization is Apple's sales program in the educational market, specifically in the university and college field. "Our K-12 [grade level] sales remain extremely healthy," he said, "and we have successfully created a method of selling that lets us work directly with large educational accounts while making the dealer an integral part of the total selling, training, and equipment installation process. With this experience as a model, we will be making a transition in our university and college sales from a direct-only to a selling approach which includes the dealer in the process."

Though he hastened to add that Apple would continue its contractual agreements with the twenty-four colleges now affiliated with the Apple University Consortium, Sculley's announcement sent shock waves through the academic community, which has historically enjoyed a privileged relationship with Apple. At the Berkeley Macintosh User Group the next day, for instance, speculation was rife as to what the concrete implications of this policy shift might be. The controversy was fueled by erroneous newspaper reports that Apple was abandoning the University Consortium.

Sculley promised a more vigorous and more focused advertising effort to support its marketing program. The premiere campaign under this policy, he said, will be a "marketing push for Macintosh that recognizes dealers' needs for flexibility in customizing their programs." This concept has several ramifications. Henceforth, he says, Macintosh advertising will emphasize the power of the machine rather than its ease of use. As part of this campaign, he promises more software for power users and firmly stated that Apple will begin shipping its own direct connect hard disk for the Mac in October. He also promised continuing support for the Apple II family in the home, education and business markets.

With regard to Apple's future direction, Sculley anticipated a greater role of Value Added Resellers in the company's efforts to meet needs in the business community. He also stressed that Apple will be working even more closely with third-party developers to expand the usefulness of Apple products.

In conclusion, he said, "I believe if we restore people's confidence in Apple as a company, and if we all stop talking about what we think is coming next and start focusing on the value of what we can offer people right now, which is a lot, then we can get things moving again . . . We are One Apple. We have put our individual egos aside and we are putting teamwork in its place."

Only time will tell what the specific results of all this will be. One of the biggest questions left unresolved concerns the issue of whether Apple will be changing its rigorous closed-architecture policies for the Mac, and what its attitude will be towards the burgeoning industry of third-party *hardware* developers. Certainly Apple is embarking on a new phase of its evolution; whether it can maintain the spirit of innovation while presenting itself as a traditional major corporation remains to be seen. □

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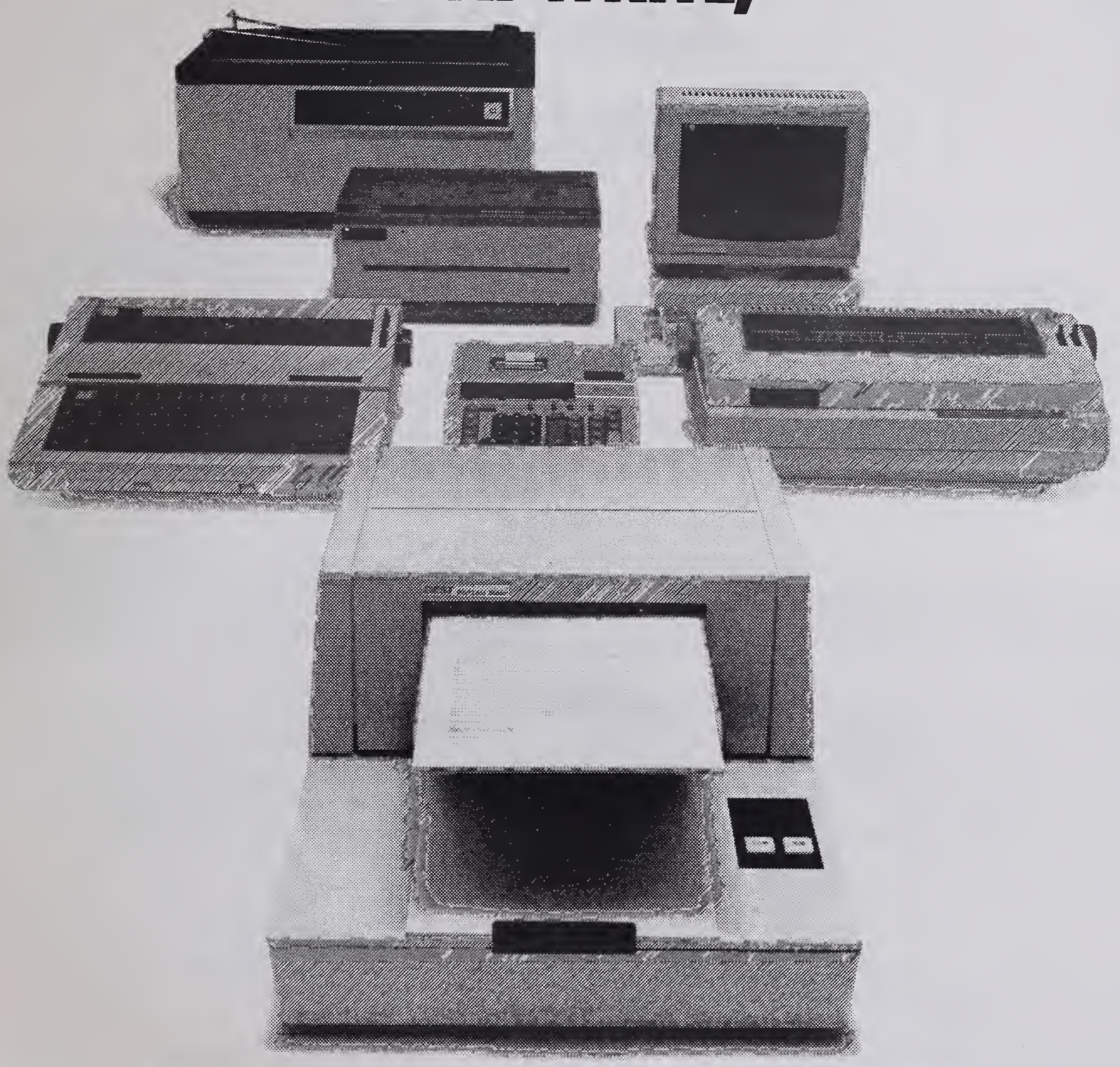

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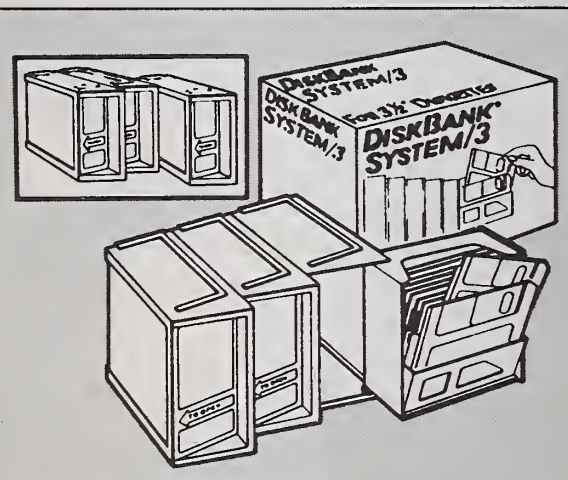

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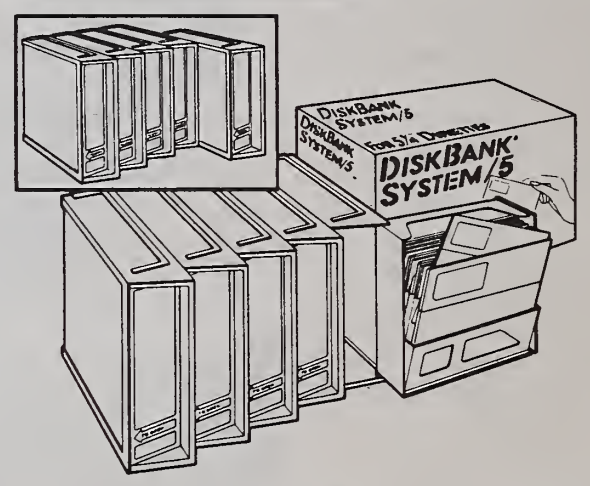

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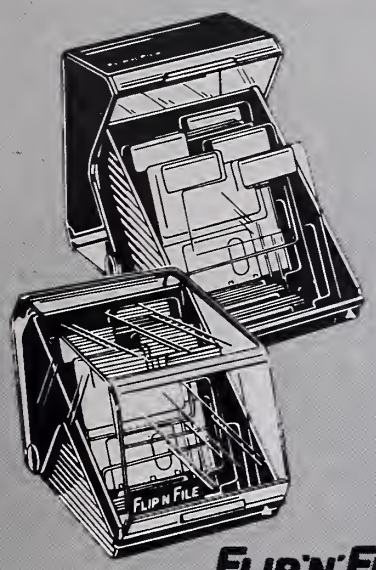

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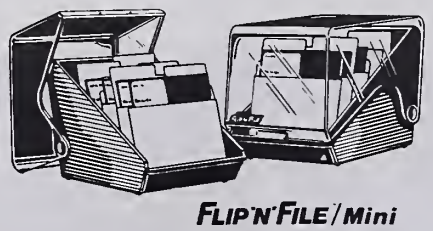

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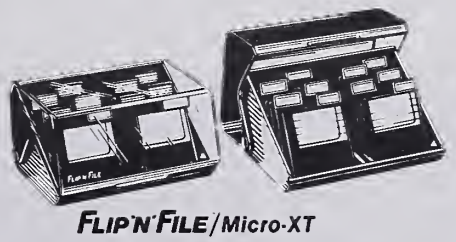

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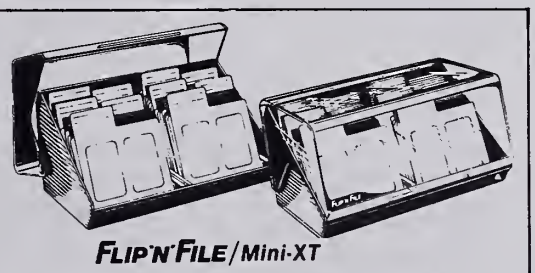

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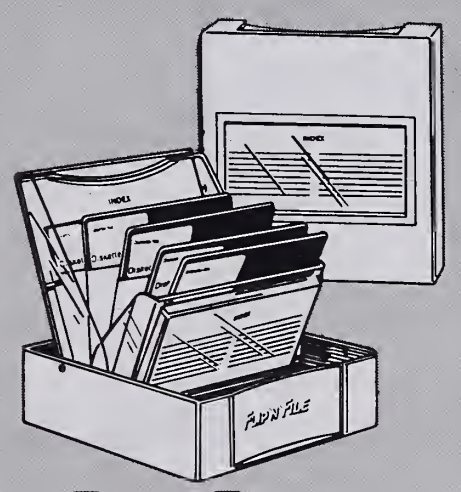

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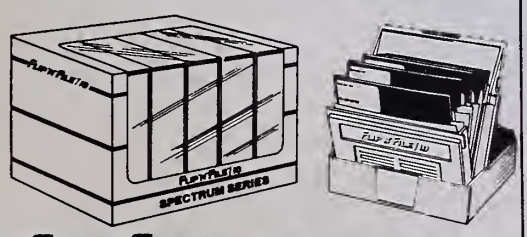

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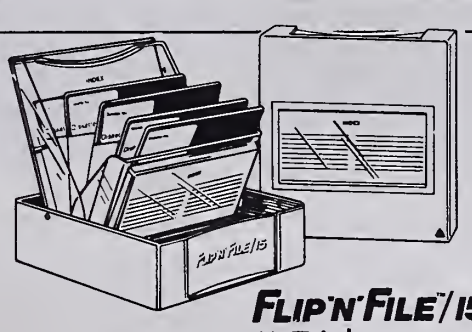

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Nationwide Users' Conference

EPSON INTERACT '85

By John McMullin

PHOTO: DON HAMILTON

On June 8, Epson took the user group concept a step further with a national televideo users' conference.

TORRANCE — On June 8, Epson America, in what may be an important industry first, conducted a major national users' televideo conference called "Epson Interact '85." The program, originating before a live audience of over 300 users in a Torrance hotel ballroom, was televised by satellite links to similar user groups in eight other major cities throughout the USA. The televised portion of the program consisted of two 90-minute segments devoted to subjects of special interest to users such as technical support, the Epson users' bulletin board, preventive maintenance tips, making money with your microcomputer, and new Epson products. The presentations were all first rate and never deteriorated into a sales pitch — after all, every attendee already owned an Epson. During the lively question and answer sessions, panels of experts in Torrance fielded questions and comments brought in by audio links from the eight remote locations.

Between and after the two televideo segments, smaller groups of users in each location attended any four of the six intensive training classes offered locally. These classes were not for the novice. Well-prepared presentations poured out information at a "baud rate" almost too fast for the classes to absorb. Fortunately, well written notes were provided to permit review of the material at a more leisurely pace later on.

The big news of the conference was that the long-awaited, long-overdue, *VALDOCS 2* software for the Epson QX-10 was *finally* ready. To prove that *VALDOCS 2* was "real" software and not, as many users had begun to believe, just vaporware, Epson gave each conference attendee the complete *VALDOCS 2* package of five disks plus documentation. In separate classroom sessions attendees received intensive training in the setup and use of *VALDOCS 2*.

The five disks in the *VALDOCS 2* packages handed out were fresh from the duplicating shop where one of several duplicating machines had introduced a slight timing error on sector 0 where the System file resides. The timing error was not detected in the verification system (which has since been corrected) but it did leave part of the System program unreadable to the QX-10. Within hours of leaving the conference, some of the users had found that the important LOAD disk would not boot up. This may have been a bit of a shock to the few novice attendees, but to the majority of experienced Nerds and Hackers it was just an interesting challenge. By noon Sunday "fix" instructions were appearing on electronic bulletin boards all over the country. When the phones started ringing at Epson on Monday morning there were almost as many offers of "fixes" as pleas for help. The concept of Interact '85 as a two-way communications medium was working! Epson has since mailed out a simple 14 step fix instruction to all registered conferees and an offer to send a replacement disk to any novices who don't feel up to handling the fix.

From the training session it was quite apparent that the new *VALDOCS* is not just a revision of the earlier issues but a whole new ball game. While most features of the earlier versions are carried over, the new version will take some getting used to. The new version is faster, more powerful, more versatile, and includes a spreadsheet-graphics combination that may rival *Lotus 1-2-3*. MicroTimes will review *VALDOCS 2* after we have had more time to work with it. This is definitely a large order of software that may come close to inventor Chris Rutkowski's ultimate objective of being all of the software 90% of the users will ever need.

Epson Interact '85 was coordinated by Margaret Johns, manager of communications for Epson. Over 2,500 users were pre-registered for the nine locations well in advance. Most locations had to turn away late applicants. For the $95.00 registration fee, attendees received a continental breakfast, a full lunch, a literature packet—and the *VALDOCS 2* package.

As Ms. Johns and desk top computer product manager Peter Bergman explained, Epson has a strong dedication to support its users. The primary support route, especially for new users, is through the dealer network. Dealers are provided special training by distributors who in turn receive any necessary technical backup from Epson America. Users may also get support and training from the more than 150 Epson user groups around the USA. Epson provides support to the user groups through their user group manager, Chuck Champlin. Ms. Johns estimated that 50% of the conference attendees were user group affiliated.

According to Bergman, Epson considers technical support a two-way technical channel. The company provides the obvious technical information via dealers and user groups, but in return the company expects, and gets, valuable feedback via these same channels. Many features of *VALDOCS 2* are a result of user feedback. To facilitate the two-way flow of information, Epson operates a central electronic bulletin board well manned by SYSOP Jessica Haitch.

Epson's present desktop computer line consists of the QX-10 and the newly introduced QX-16. The QX-10 is no longer being manufactured and will be phased out when present stocks are exhausted. The QX-16 will run both CP/M and MS-DOS software in addition to *VALDOCS 2*. Epson also offers several briefcase-size portable computers including the popular Geneva model.

Bergman estimates Epson's share of the total microcomputer market as about 2%. What new Epson computer products can we expect in the near future? Mr. Bergman wasn't talking, but we got the impression he had secrets worth keeping. He, Ms. Johns, and the other Epson executives we met don't come across as a team that will settle for 2% of any market. □

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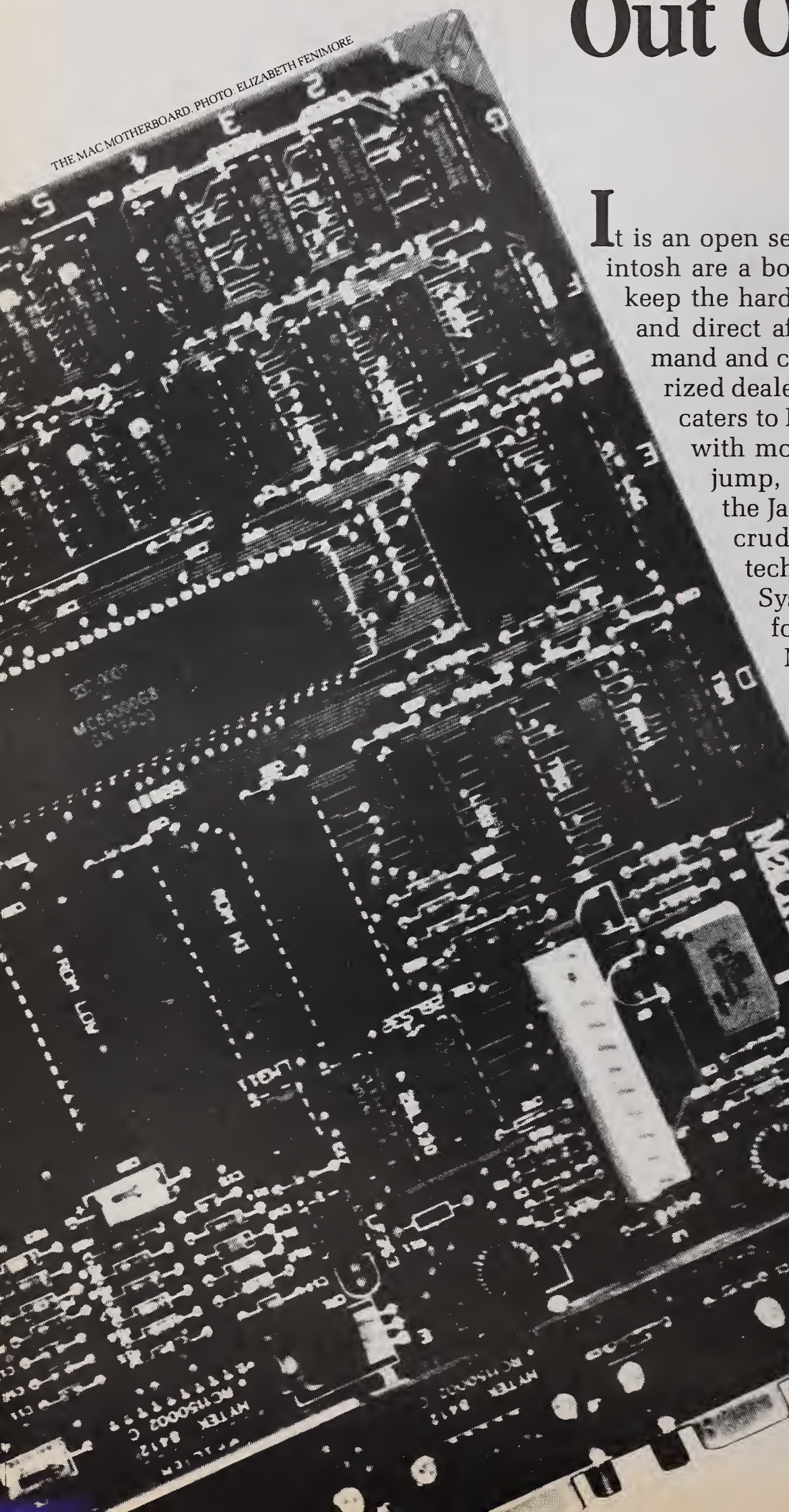
Third Party Mac Upgrades: Out Of The Garage

By Bill Reefer



THE MAC MOTHERBOARD. PHOTO: ELIZABETH FENIMORE

It is an open secret that third party upgrades for the Macintosh are a booming business, despite Apple's efforts to keep the hardware architecture of the Macintosh closed and direct after-purchase sales back to its dealers. Demand and competitive pricing outside of Apple's authorized dealer network have slowly formed a market that caters to Mac users who want to pack their machines with more RAM, even up to 2 megabytes. The cut, jump, and glue upgrade design that appeared in the January 1985 issue of *Dr. Dobbs' Journal* was crude, but it provided the basics that many techs have since refined. CJS Systems, Julian Systems, and others were selling Mac upgrades for around $500 as early as the UC Berkeley MacFest in late January.

Duane Maxwell, Stas Lewak, and Doug Gilbert, of the San Diego-based Levco Enterprises, had scrambled to get their upgrade kits ready for the San Francisco Mac Expo held in February. They were upgrading Macs during the show in their booth. "There was tremendous interest," Duane recalls. "By the third day of the show people were waving money at us, 'Do mine! Do mine!'" Levco's phone rang off the hook for three weeks after the Expo. Since then, a host of companies has formed to supply Mac owners with 512K, and more recently, 1-megabyte upgrades. Levco, for instance, has announced upgrade kits to 2 megabytes of RAM in increments of 512K. They are currently developing a national distribution network with distributors in LA, Oregon, Michigan — almost any town where there is an Apple University Consortium school and market of students.

Word on the street is positive. Mac upgrades by unauthorized vendors are not blowing up. The various procedures work; few problems have been reported. What had been a curiosity has become accepted as a viable option to the prohibitive prices offered by Apple dealers.

Richard Reineccius is the Art Director and Manager of the Julian Theatre in San Francisco. His son, Stacey, and Bill Gandy operate Julian Systems, Inc., which shares office

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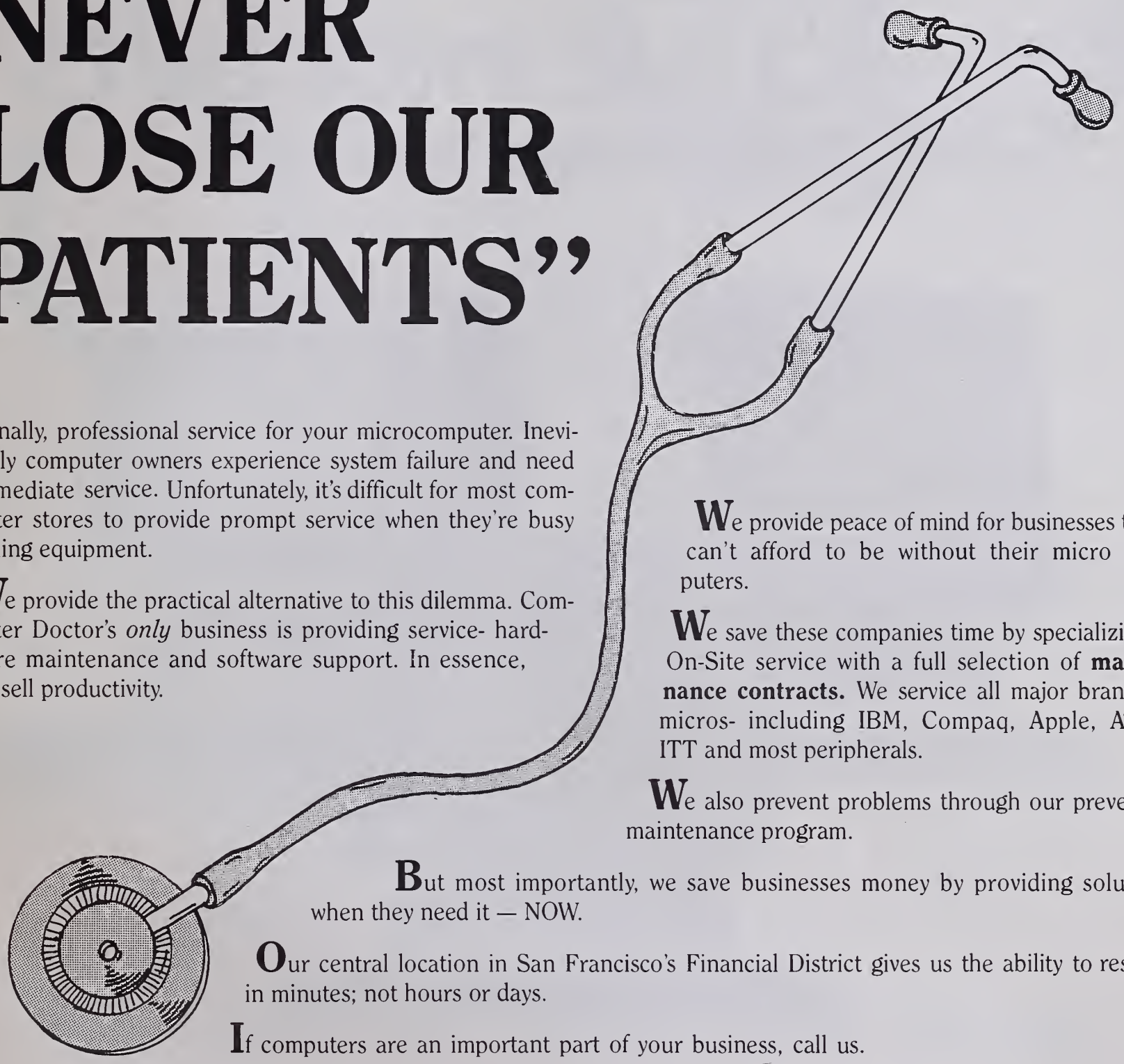

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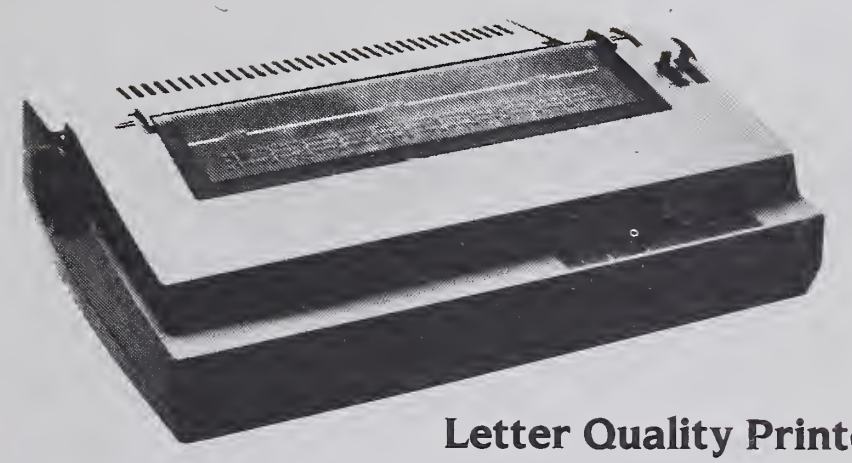

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Levco Enterprises Unleashes The Monster Mac

SAN DIEGO — To say the least, the development of Levco Enterprises over the last year has been meteoric. A year ago, it was the name given by Stas Lewak to the consulting firm of which he was proprietor and sole employee. Today Levco is a solid contender in the 512K Mac upgrade business and is now launching its Monster Mac 2-megabyte upgrade — supported by a nationwide network of dealers. Not bad for a company described by one of its co-founders as running on pizza and Coca-Cola; a company in which the brainstorming session and the marathon all-nighter are integral to the development process; a company that's managed to combine a shrewd business sense, a healthy sense of customer relations, a great instinct for the theatrical and a goodly element of hacker mentality.

According to Duane Maxwell, one of the co-founders, who conducts most of Levco's dealings with the press and other denizens of the outside world, it all started last year when Stas managed to acquire one of the first Macs sold in Southern California by the simple expedient of buying a dealer's demo model out from under the dealer. He then brought it home, where he, Duane, and Doug Gilbert (who had met in the course of working for various computer companies in San Diego) set about some serious warranty violation.

"We opened it up," Duane recalls. "Ripped the chip out, stuck an HP 64000 emulation pod in the thing and dumped the ROMs out on paper. And those went into a little binder and I took them home."

At the time, the 512K Mac was still in the vaporware category. When the "How To Do Your Own Fat Mac" article appeared in *Dr. Dobbs' Journal*, says Duane, Stas and Doug couldn't resist. Due partly to errors in the article itself, the attempt was a failure, but they were undeterred.

"It finally occurred to them," Duane relates, "that, 'Gee, there's a better way of doing it than what's in the article.' They designed a little board and started production of it in small quantities, then started doing upgrades for friends. I think the most expensive upgrade they did was $500. At the time, Apple was not offering an upgrade, and shortly thereafter they started offering this $900 board swap."

Enter their friend Kurt Johnson, who saw the commercial potential of the garage upgrade business, put up some capital and has generally served as Levco's business mentor ever since. February was rolling around and with it the *Macworld* Expo. Stas' father, whose company, Paragon Software, was marketing *Fonts* for the Mac, had a booth at the Expo, and in a fit of inspiration Stas and his buddies decided to pack up all their equipment and do upgrades in the booth.

There were other exhibitors offering Mac upgrades there. One was handing out flyers and another was showing pictures of his work. But somehow this lacked a certain immediacy in comparison to what Levco was up to. As Duane describes it, "There was rosin smoke coming out of our booth. People were saying, 'My God, these people obviously have confidence. They're doing it right there in front of everybody!' People would sit there and watch an upgrade being done, and they'd go home, get their Mac, and bring it back."

The first customer was lured by the price. Upon receiving an exhaustive explanation of the procedures involved, he handed over his Mac — and the upgrade worked. Spectators started bringing their machines. By the end of the day the booth was fairly stuffed with Macs in need of fattening. "We carted them off to the hotel room and spent all night doing upgrades," Duane reminisces fondly. "Brought 'em back the next day, sent 'em out. Wham! More machines came in. Did those, passed 'em back. By the third day, it was 20 deep around the booth. We had run out of parts. There were people waving $50 bills, saying, 'Do mine next! Do mine next!' It was insane."

Fortunately for the mental and physical well-being of these overnight entrepreneurs, the Expo ended. (It is also something of a testimonial that of all the machines upgraded at the show, only three have ever developed problems, which have since been fixed — and that Levco considers those three entirely excessive.)

By the time they got home, Stas' phone was ringing off the hook and it became evident that the 512K upgrade business was going to prosper. However, Levco also realized that this market would eventually become saturated. Besides, the West Coast Computer Faire was coming up, raising the issue of what to do for an encore. "This was not a Macintosh show, it was a general computer show," says Duane. "We thought we needed a little flash."

PHOTO: ROBERT MATHEU

Levco's founders contemplate their next amazing product. Clockwise from left: Doug Gilbert, Kurt Johnson, Stas Lewak, Duane Maxwell.

More pizza. More caffeine. One Saturday morning after a Friday of intense thought, Duane was awakened from a sound sleep by a phone call from Stas: "If you can do the software, Doug says he can do the hardware. Let's do a 2-megabyte Mac." Sleep was once again a stranger to Levco, and the next Tuesday a proto-version of the 2-meg Mac was up and running.

As to what software has to do with a 2-meg upgrade, Duane explains that ROMs don't understand memory greater than 512K. There are several solutions, one of which is to patch your own ROMs, an approach, he says, that's favored by many 1-meg upgraders. Levco found this option unsatisfactory, largely because it left the upgrader too dependent on Apple — which indeed has come out with several iterations (subtle changes) in the ROMs in the last year, sending third-party upgraders scrambling back to the drawing board.

"Or," he continues, "the alternative is to ignore Apple's ROMs, either before they have control or after. The software that was running on that machine [the proto-Monster Mac] took charge after Apple's ROMs had done their dirty work and played games with the mind of the Mac to make it understand the extra memory."

The Monster Mac made quite a splash at the show, but its creators were dissatisfied. "The way Levco works," Duane says, "is, we go, 'Would *we* buy it?' If the answer is yes, we go for it." In this case, unfortunately, the answer was no. The software skulduggery that made the Mac utilize the memory also made it incompatible with some existing software. Also, the RAM wasn't running at nearly the speed it was capable of.

So once again the group went into marathon brainstorming to address these problems. By chance, one of the Macs that came in for a 512K upgrade was a very early model, the workings of which were considerably more transparent than those of subsequent versions. This allowed the Levco-ites to deduce what they needed to know about how the Mac works. They worked feverishly, correcting problems, adding features, and finally had a version ready for beta testing. According to Duane, the beta testers were selected largely because they were heavy users, developers and the like, who would use the machine with every conceivable form of software and subject it to rigorous use.

The resulting Monster Mac not only adds memory to the machine, but it's compatible with all currently available Mac software, has expansion ports, can handle multiple sizes of PROMs and will accommodate future expansion possibilities from Apple.

Already Levco is thinking about the next product. "All of us are very ambitious," says Duane, "and a lot of us are dreamers." No matter how successful the company becomes, however, its founders plan to keep the same small core of people, on the principle that the best ideas come out of small, close-knit groups.

And as to how all this fits in with Apple's stance vis-a-vis third party upgraders, Duane says, "At every user group meeting, I make the statement, 'It's not their machine, it's your machine. If you want to drop it off a cliff, you can do it.'" More seriously, he continues, "We put it on paper. We're not afraid to say we violate Apple's warranty. We don't know what's going to happen. All we're trying to do is honestly offer you a cheap alternative to something that shouldn't cost as much as it does. And the more of these we do, the better your position is. At last count there were 11,000 modified Macintoshes out there. That represents a significant percentage."

— Mary Eisenhart

space with the theatre. Julian Systems, Inc., is a Certified Apple Developer, and has made application to become a Value Added Reseller (VAR). They will upgrade your Macintosh to 512K for $225, a good rate in the competitive San Francisco market.

The workshop is upstairs in the back. Wristbands that are worn to ground the technicians hang loosely from the long work bench. A green circuit board sits mutely on a grounding shield atop the bench. Soldering irons are hung neatly on pegs below. A Hot Vac, which is used to remove chips from the Mac's board, rests in a plastic case to one side. A vise juts out from the tabletop.

Stacey explains that Julian Systems had started out developing software for arts organizations. Past projects included a program for box office management and installation of a sophisticated lighting system for the theatre that can control a 10,000-second fade-out, run by an Apple II. "What aren't you working on," I ask. Stacey laughs, "If we had another good tech, we'd look into some hard disk modifications, but we aren't working on that now." In the near future they plan to offer 1- and 2-megabyte upgrades to Mac users.

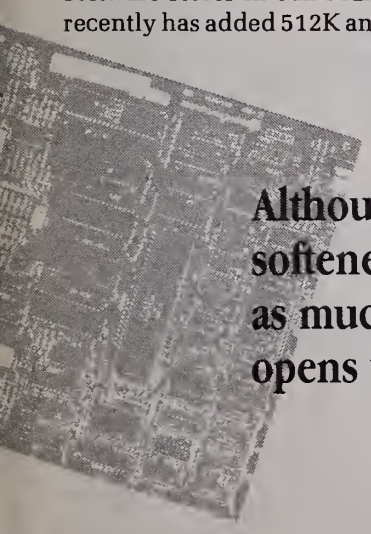
Ron Schaeffer runs two discount software stores in San Francisco. He recently has added 512K and 1-megabyte upgrades for Mac owners. A retired fireman, Ron stocks the largest supply of Macintosh software in the Bay Area: over 427 titles on the shelf. "We were interested in providing upgrades as soon as they become available. I thought the 128K Mac was too slow and didn't have enough memory." Ron's price for a 512K upgrade is $350. "I can't compete with the guys in the garage. On the other hand, I don't have the overhead of a dealer, for instance, but I do have a few middle men to contend with. I'm going to be here awhile so I can offer a one year warranty."

Because of the encyclopedic array of software that he carries in his stores, Ron believes that providing upgrades is a legitimate extension of his company's service to its customers. It is a matter of pride.

Like Ron, Ann Chamberlain of the Electronic Depot, in Fremont, has found a great deal of business because of the dealers' "unattractive price" for a 512K upgrade. The Electronic Depot opened last November. It outgrew one repair room and in 2 months was able to fill out a 1,000 square foot work space dedicated to the repair of VCRs, printers, and computers. They will upgrade a Macintosh to 512K for $279 and offer a 90 day guarantee. They hope to offer 1-megabyte upgrades in the near future.

Price, however, is not the only issue that many third party vendors believe they are addressing. Providing service to end users in the East Bay is a big part of the Electronic Depot's success. According to Chamberlain, many of the repair companies and dealers cater to businesses. Additionally, many users, including businesses, find that they pay too much for service they don't really need. The Depot provides good service at a reasonable price when the user needs it.

Service is an important factor, too, for Julian Systems, Inc. "I upgraded my Mac before Christmas," crows Stacey, who studies EE at Cal. "Just opened up my Mac and got out the continuity tester and checked out every lead 'til I got it right." That kind of first-hand experience led Stacey and Bill to distrust the workmanship of some of the so-called authorized dealers. Bill Gandy explains, "The lack of real service is endemic. They know how to open the box and swap the boards. That's all they are authorized to do. One dealer complained about our work, and he didn't even know that he had connected the AppleTalk cables incorrectly. Look into the work room of some of these authorized dealers. Do they have grounding shields? Do they run loop back tests, or check the keyboard and the disk drives when they upgrade your Mac? Apple has got to be interested in talking to competent third party service and repair people."



Although Apple is rumored to have softened its stance recently, it has as much as said that any owner who opens up a Mac voids the warranty.

Your warranty is another key issue to consider in the upgrade equation. Apple provides a 90 day warranty after the purchase of your Macintosh. Assuming you have clear title to your Macintosh, you should be able to do anything you want with the machine, even before the warranty period expires or even if you purchased the extended Apple Care Plan. Right? Wrong! Although Apple is rumored to have softened this stance recently, it has as much as said that any owner who opens up a Mac, even to see the names of the Mac development team etched inside, voids the warranty. This policy, in turn, is passed on to the dealers. According to Brad Roth, who manages the new Info-Max computer outlet in Oakland's Civic Center, "It is a matter of store policy not to work on Macs that have been upgraded by an unauthorized vendor." Brad explains that until further notice from Apple, this includes service for the upcoming ROM upgrade as well. "There would be no way that Apple would accept or reimburse my cost if we worked on something that proved defective."

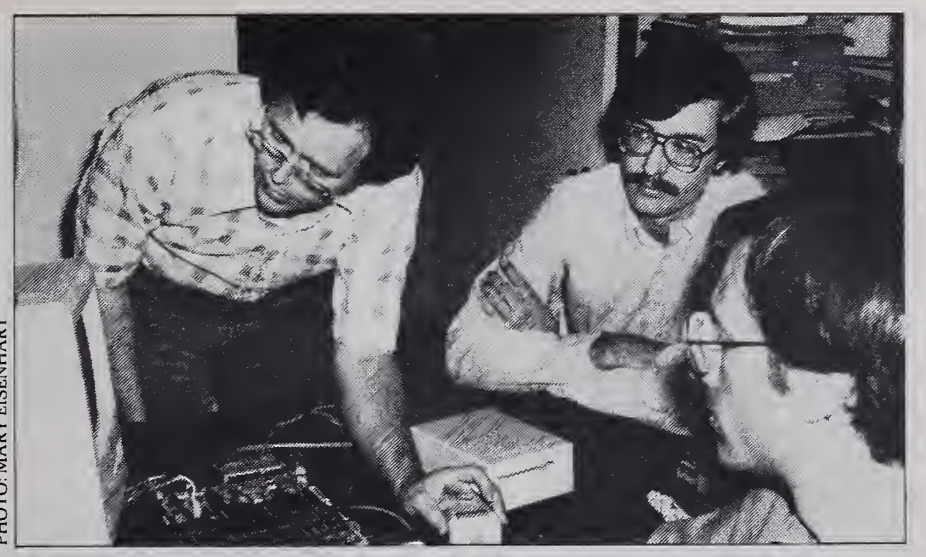


PHOTO: MARY EISENHART

Chuck Meyer, Steve Sawyer and John Sawyer (the C, S, and J of CJS Systems) run a diagnostic check on a customer's board.

But, at the same time, a growing number of authorized Apple dealers are themselves using third party vendors to upgrade the boards that customers bring into the dealer's stores. Electronic Depot, Julian Systems, and others claim to have sold upgraded boards to authorized dealers. In fact, one company, Super Mac Technology, based in Mountain View, CA, sells 512K Macintosh motherboards directly and exclusively to retailers and dealers. Can an authorized Apple dealer contract uncertified technicians to install parts and not void the warranty between the customer and Apple? And, despite assurances to the contrary, one has to wonder if full disclosure was made to the customers who may yet think they paid $700 for a 512K board that came straight from the Apple plant.

Quality of work is an important issue, especially to the vendors who, with limited budgets, depend on the good graces of word-of-mouth advertising. According to Steve Sawyer, a general partner of CJS Systems, what you get with a generic upgrade is this, "The 64K chips are cut or de-soldered from the board. The pins and holes of the board where the 64K chips were are desoldered and thoroughly cleaned. The 256K chips are either socketed or soldered onto the board, and a 4x1 Multiplexer is added to the address line."

There are debates and variations on the procedures, just as there are people who kick the wheels of a car for inspection. Some, like Steve, claim that the chips are too sensitive to heat and swear by the socketing method for placing the chips on the board. Others, like the Depot, or MacMemory, of Mountain View, CA, prefer to solder the chips to the board; socketing only on request. Most recommend the 150 nanosecond chip over the 200 nanosecond chip that Apple installed.

The most important issue, though, is not price, service, quality, or even your warranty. Each of those issues does, however, speak to some aspect of the larger problem, which is Apple's vain attempt to keep the Macintosh closed tight, like a vestal virgin in Steve Jobs' vision of a consumer appliance industry. Apple has provided "Inside Macintosh" for software developers, but, unlike in the glory days of the Apple II, hasn't released any public information concerning the guts of the Mac. There are, though, some tall tales.

Like, how techies baked a Mac motherboard in an oven to melt off the lamination and unmask the maze of circuitry. About a group in Ann Arbor, Michigan, called IM Underground, that produced a MacPaint schematic of the Mac's wiring and sold copies for $25.00. Then there are the "Soylent Green" stories of how Apple re-uses 128K boards returned from dealers. Or the hushed whispers that reveal nameless people, who, with sketchy access to the Apple plant in Fremont, CA, sell used or mildly defective 128K boards to the merchants of the burgeoning grey market in computer components. It took a year, but the hackers and techies finally unpacked enough of the code in the ROM to independently document how the Macintosh works.

Many of the third party vendors appeal to the Hacker's Ethic, which espouses a "hands-on imperative," freedom of information, and modification of computers according to users' needs. "People should be allowed to open up and modify their machines, especially since the Mac is a tool that can help extend one's own potential and intelligence," says Steve Sawyer of CJS.

"It's quite a large step," complains

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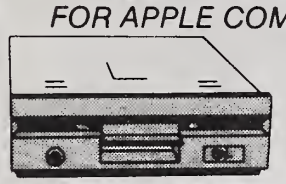

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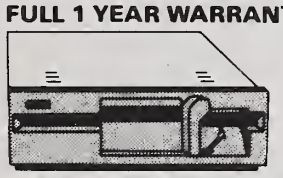

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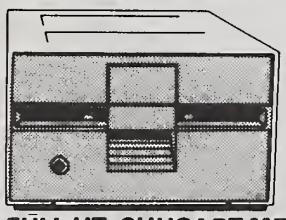

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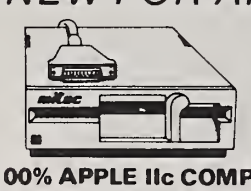

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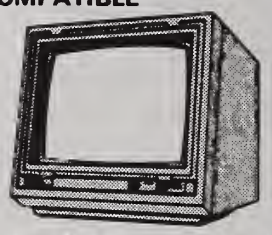

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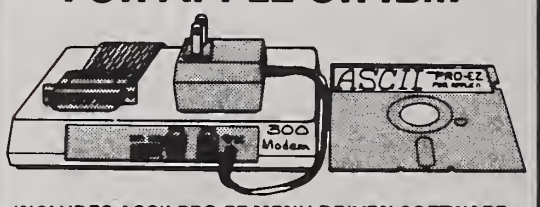

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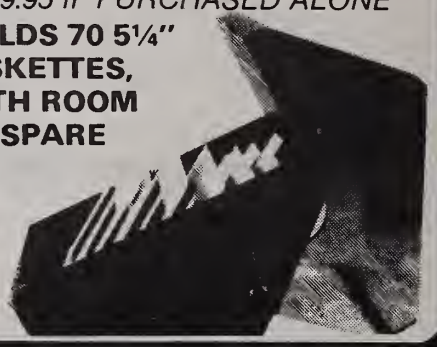

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Beck-Tech Offers MacMegabytes

BERKELEY — Ten years ago, Stephen Beck started Beck-Tech as an electronic consulting and design company. His idea was to form a sort of commercially viable think tank, in which each product would finance the creative development of the next. The idea has been highly successful, and the organization's current brainchild is its 1-megabyte upgrade, known as MacMegabytes.

This board allows the Fat Mac to use an additional 512K as a RAM disk. As a result, programs run faster and more efficiently, and since the RAM disk is a chip rather than a floppy disk, there are no moving parts to break down.

MacMegabytes has been carefully designed to minimize drain on the Macintosh power supply, which, Beck says, can be a problem with some upgrades on the market. MacMegabytes usually runs at .8 watts, and its greatest power consumption is 1.5 watts. "You have some products where the power is double, triple, quadruple that," he notes, "and they work fine until you plug a floppy disk drive into the Mac. You might start to have problems then with the power supply."

Another feature of Beck-Tech's upgrade is that it's been designed for compatibility with existing software. Since there are many upgrades being offered that turn out to be incompatible with much of the software available for the Mac, Beck recommends that when you go shopping you bring along a disk of *Microsoft Word*. If that runs on the dealer's upgraded machine, he says, you have little to fear in the way of compatibility problems.

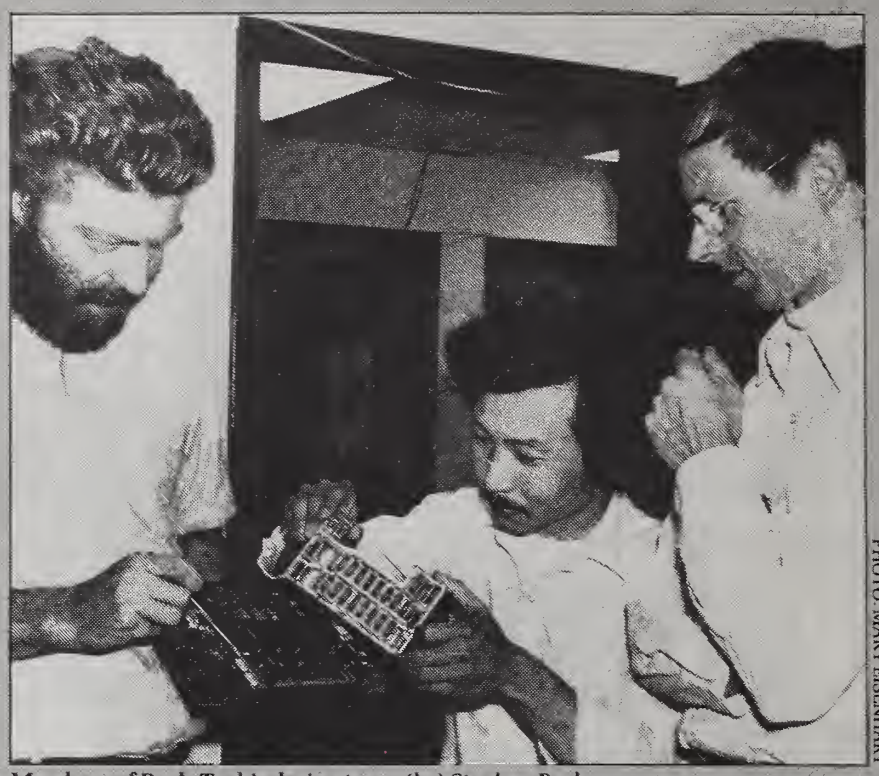


PHOTO: MARY EISENHART

Members of Beck-Tech's design team: (l-r) Stephen Beck, Phat Ho, Henry Spragens.

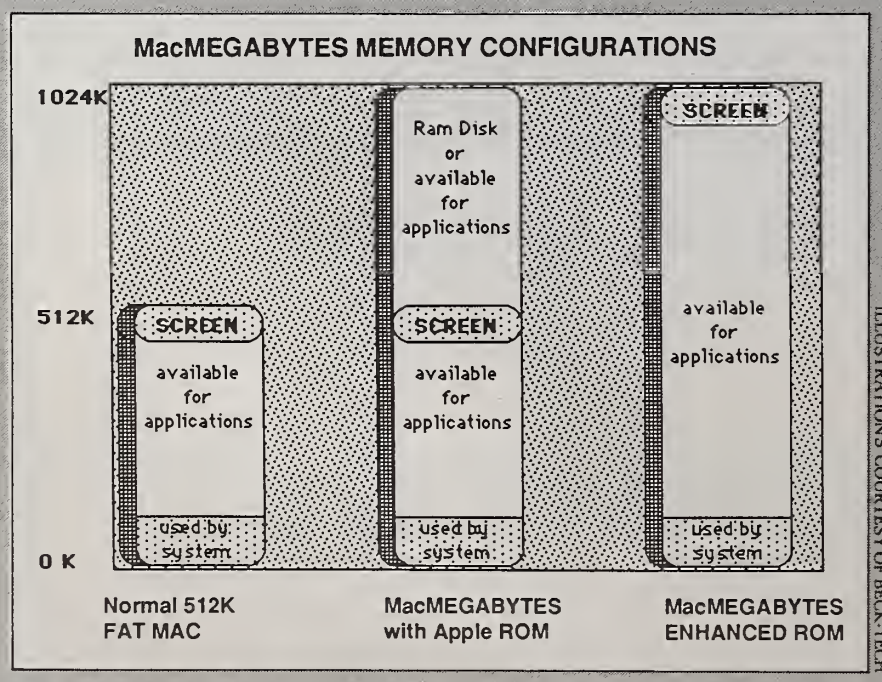
Beck notes that even with a MacMegabyte upgrade, the Mac is configured in such a way that the memory resides on both sides of the screen memory. While most programs are sophisticated enough to deal with this, the user will run into problems when attempting to run more than four 128K programs using the Switcher. Consequently, Beck-Tech also offers a ROM enhancement for the 1024K upgrade which creates a continuous memory for applications, allowing up to seven 128K programs to run simultaneously.

Beck-Tech has been shipping MacMegabytes for several months now. Turnaround time on mail orders is usually 48 hours; a client can also make an appointment, bring in his machine, and have the upgrade done while he waits, usually about an hour. The company also offers kits for do-it-yourselfers, but Beck cautions that only those with intermediate to advanced technical skills should attempt the procedure. A nationwide network of authorized dealers is being formed, and (shades of Borland and AST) plans are afoot to bundle a desktop accessory program called *Quickset* with the boards.

Other projects are in the works — a 2-meg upgrade, for instance, and various peripherals. However, Beck advises a would-be upgrade customer to consider what his needs really are before going for an expensive procedure that may be more than he really needs. Most existing Mac software, says Beck, runs just fine with 512K. A good case can be made for and against 2-meg upgrades, he says, and it basically comes down to the issue of dollars vs. usefulness. With upgrades from 512K to 2 megabytes running around $1,000, Beck suggests that a customer might be better off getting the 1-meg upgrade and spending the difference on software to solve particular application problems. If you're doing serious heavy-duty number crunching, he says, you may need all the memory you can get, but "if you're a business user, I would contend that 1 megabyte is enough."

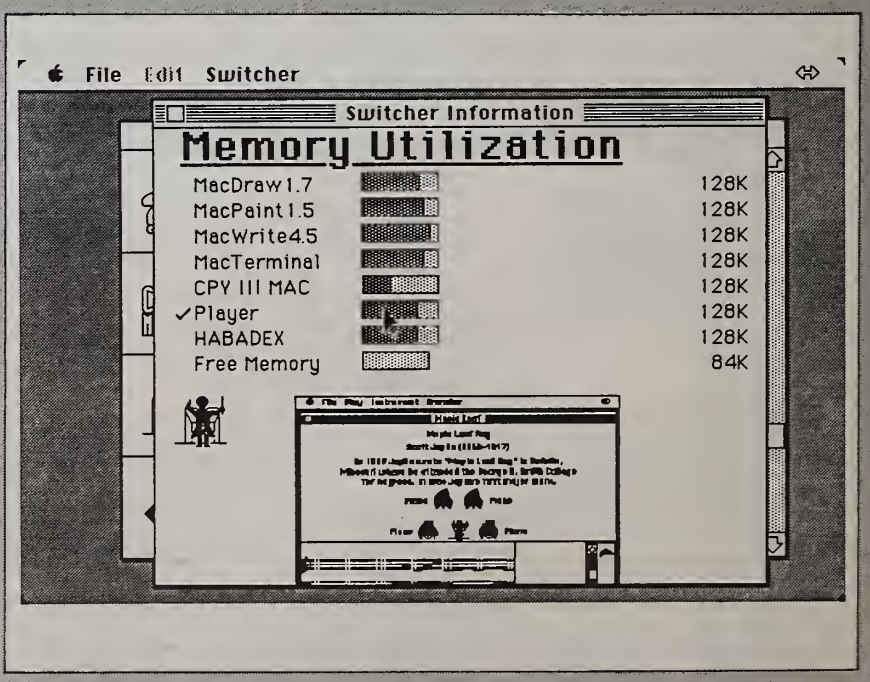
Concerning Apple's attitude to his operation, Beck has been demonstrating MacMegabytes to Mac's creators, who seem to be thawing somewhat towards third-party developers. Besides, he says, MacMegabytes has created an unexpected benefit for Apple in increasing Macintosh sales. "We get people calling us who've read articles about our product, saying 'I've been waiting to buy a computer, and this is just what I've been waiting for — more memory.' We certainly feel that Apple would be pleased with the rejuvenation our product brings to the Mac. It makes it more usable, more efficient to use."

— Mary Eisenhart



ILLUSTRATIONS COURTESY OF BECK-TECH

With MacMegabytes and Beck-Tech's ROM enhancement, most of the megabyte is available as continuous memory for applications.



With the Macintosh Switcher, a 1-megabyte Mac with Beck-Tech's ROM enhancement can run seven 128K programs simultaneously.

Bill Gandy of Julian, "from the Apple II, the Apple III, and even the Lisa, where you could open up the machine. But you can't do that with the Macintosh. If you do, you blow the warranty." This is a key issue for Apple, and particularly, Steve Jobs. In a recent speech at Stanford, Jobs explained his evolving attitude toward slots and hardware customization. At first, if people wanted to customize their machine, they put in cards. "That was because we didn't know a lot about the markets we were going after. They didn't exist. Today, you customize with software. That's why we built the flexibility, the bitmap display, etc. And what we are finding is that for 95% of the people, that works perfectly. So what we want to do is build one identical product on automatic assembly lines and pump them out really cheap to tens of millions of people. We're focusing on a commodity product, and the 5% of the people who want slots, well, Macintosh is not for them. Except in discrete small markets, the cards are pretty obsolete, actually."

Dan Praeger, President of VOAD, which is based in LA, understands that Mac's hardware is so much the cornerstone of the product that Apple wants to create a closed atmosphere technically while leaving software development wide open. "The problem is Macintosh has to be at least a 512K machine to be effective, but neither Apple nor its dealers have the capacity to upgrade everybody's Mac." For $325 and a trade-in of your 128K board, VOAD will take care of the problem and ship to your home a burnt-in and tested 512K board, with instructions and tools for self installation. Their 1-meg board will also be user installable. "Realistically, what can Apple say? 'Stop?' They've already taken a lot of flak over the pricing on the 512," Dan figures. "They don't seem to be banging at the issue very hard. Without endorsing it, Apple seems to be quietly accepting third party sources providing hardware accessories and services." Steve Sawyer, at CJS, claims that "in many respects, it was the pricing and dealer policies of Apple that created this situation in the marketplace to begin with. We are filling a niche that Apple gave up with its closed architecture policy."

Steve Edleman, president of Super Mac Technology, likes the idea of the Macintosh as a consumer appliance, but says it creates the problem we face now. "How many of the 190,000 people that bought a 128K Mac, who know that they need 512K, really want to crawl around inside of the Mac and figure it out for themselves?" he asks incredulously. Duane Maxwell, the software hack at Levco, agrees. "The appliance computer is a good idea. But the Mac also attracted the hackers who want to get at the power in the machine. So maybe it's a different market than what Apple counted on."

Many of the third party vendors think that it is a positive role for them to figure out the Macintosh independently. "Apple needs smart-ass people like us to clean up after them," hoots Duane. "What closed architecture? It's open now that we've been mucking around in it." Carlos Suarez of Mac Memory adds, "Look at all of these people working like demons to develop new products. In a sense, Apple has to like the fact that people are opening up the Mac and finding out how it works. Look at HyperDrive. They did the development and Apple gets the report on what works and what doesn't. Apple is playing it smart. I'd do the same thing and try to stimulate as much productivity as I could."

PHOTO: ELIZABETH FENIMORE

David Shirley and Stacey Reineccius of Julian Systems, with a flock of Macs awaiting upgrades.

Duane Maxwell of Levco: "The appliance computer is a good idea. But the Mac also attracted the hackers who want to get at the power in the machine. So maybe it's a different market than what Apple counted on."

Companies like Levco are now pushing the Mac to new limits by offering 2 megabytes of memory. 1.8 meg of RAM can be used for applications or be partitioned into sections of memory with commercially available RAM disks or Apple's Switcher. Steve Sawyer of CJS in Berkeley is the Levco rep in the SF/East Bay region. He explains that the Levco's kit includes a daughter board about 3/4 the size of the original Mac motherboard. An upgrade to 2 megabytes from 512K will cost $900. Add $250 if the upgrade is from 128K. Kits for the 2-meg upgrade are $500, if you have a 512K machine and want to do your own board installation. The board includes 2 specially designed programmable Read Only Memory chips (PROMS) that patches the ROM of the motherboard. Another feature is that Levco leaves 2 sockets available for the user to install other, customized PROMS to run a program that will auto boot the Mac from an external hard disk, or build Basic into the ROM, or put a debugger or program monitor within the system. They will bundle software with the kit to help you get the most out of the increased memory.

At first glance, "patching ROMS" and "blowing PROMS," adding debuggers, program monitors, and other tools might seem arcane: toys for that 5% of the market who want to open up the Mac as a hot-wired hacker's machine. So be it. Certainly users of software like *Jazz* and *Excel* will also benefit from a megabyte of RAM and more. Until later in the year, or possibly even 1986, when Apple releases its own hard drive, RAM increase, and other turbo features it has under development, the Macintosh 512K is the high-end machine of Apple's 32-bit line; especially since the demise of the Lisa (aka) Macintosh XL. In the meantime, you do have some other options. □

Who To Call

These are some of the numerous companies statewide who offer third-party Macintosh upgrades. Techniques, prices, and options vary — call for information.

SOFTWARE FOR LESS
37 Vicente
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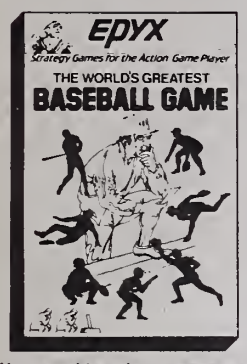

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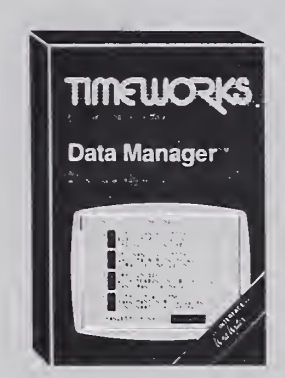

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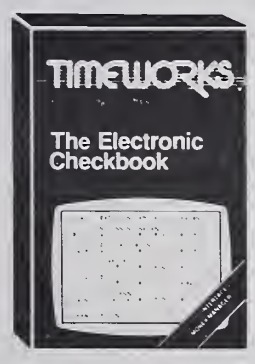

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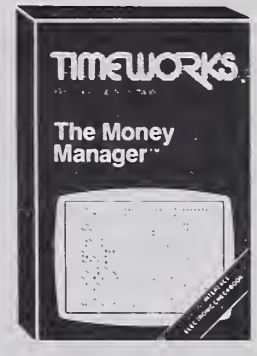

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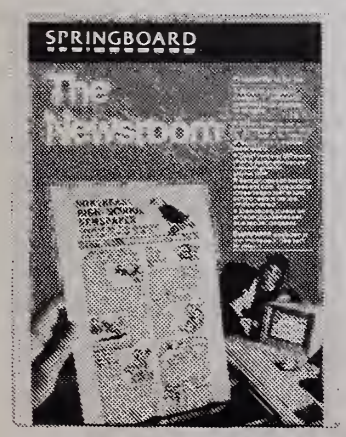

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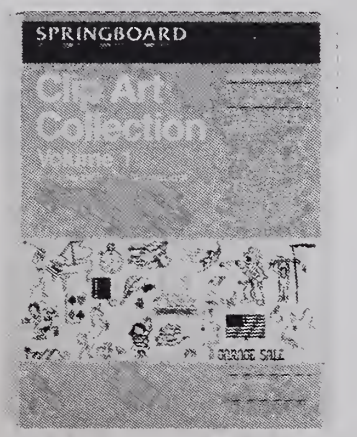

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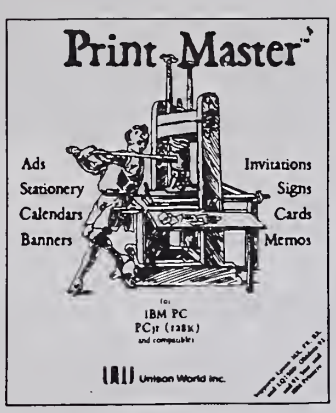

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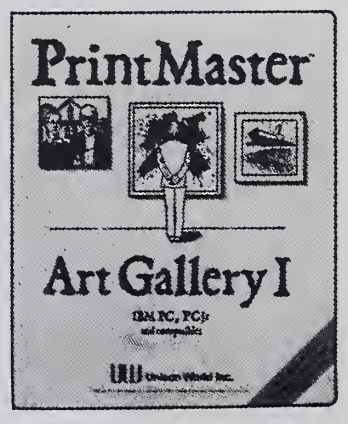

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THE WELL

By Laurie and Steve Foster

In ancient times, the well symbolized a place to quench one's thirst for knowledge as well as being a meeting place for the community. Today, The WELL is a tool to access and share information as well as being a meeting place for an extended (on-line) community.

The WELL (Whole Earth 'Lectronic Link) is a computer-based information utility run from the offices of The Whole Earth Catalog and The Whole Earth Software Review in Sausalito, California. It was co-developed with NETI (Network Technologies, International) of Ann Arbor, Michigan.

As a regional telecommunications utility, The WELL is poised somewhere between national services like the Source or CompuServe, and the endlessly proliferating special-purpose BBS systems that serve local users and run on PC or Apple-sized micros.

Basic functions available to WELL subscribers include teleconferencing, electronic mail, on-line chat, and file transmission. On-line HELP and optional menus guide the new user through desired functions and features.

Currently active conferences include:

Legal	**Jokes**
Music	**Writers**
Science Fiction	**Games**
IBM PC	**Word Processing**
Spreadsheets	**Macintosh**
Programming	**Hackers**
Currents in The Well	
System news	**Help**
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Each conference holds a series of numerically identified conversations. Any conversation consists of a "topic" (a conversation-initiating message), and a series of "responses" (conversation-continuing messages). Interactive prompts guide the user to BROWSE a list of current topics, SEE a specified topic and associated responses, ENTER a new topic (i.e., start a new conversation), or RESPOND to an existing topic (i.e., join in an on-going conversation). Helpful system features allow you to:

- by-pass conversations that are not of interest;
- make a Conference List that automatically strolls you past conferences you want to follow;
- get an automatic display of all new comments in any specified conference since the last time you checked that conference;
- find out what other users are on the system simultaneously with you (which means you can initiate an on-line "chat" with them);
- find out what other users are participants in any conference or on The WELL itself;
- find out the last time that a specified user logged onto The WELL (handy when you want to know if someone has picked up their mail yet);
- find out what remarks another user has made about him/herself by way of introduction to other WELL users.

There are numerous other features as well.

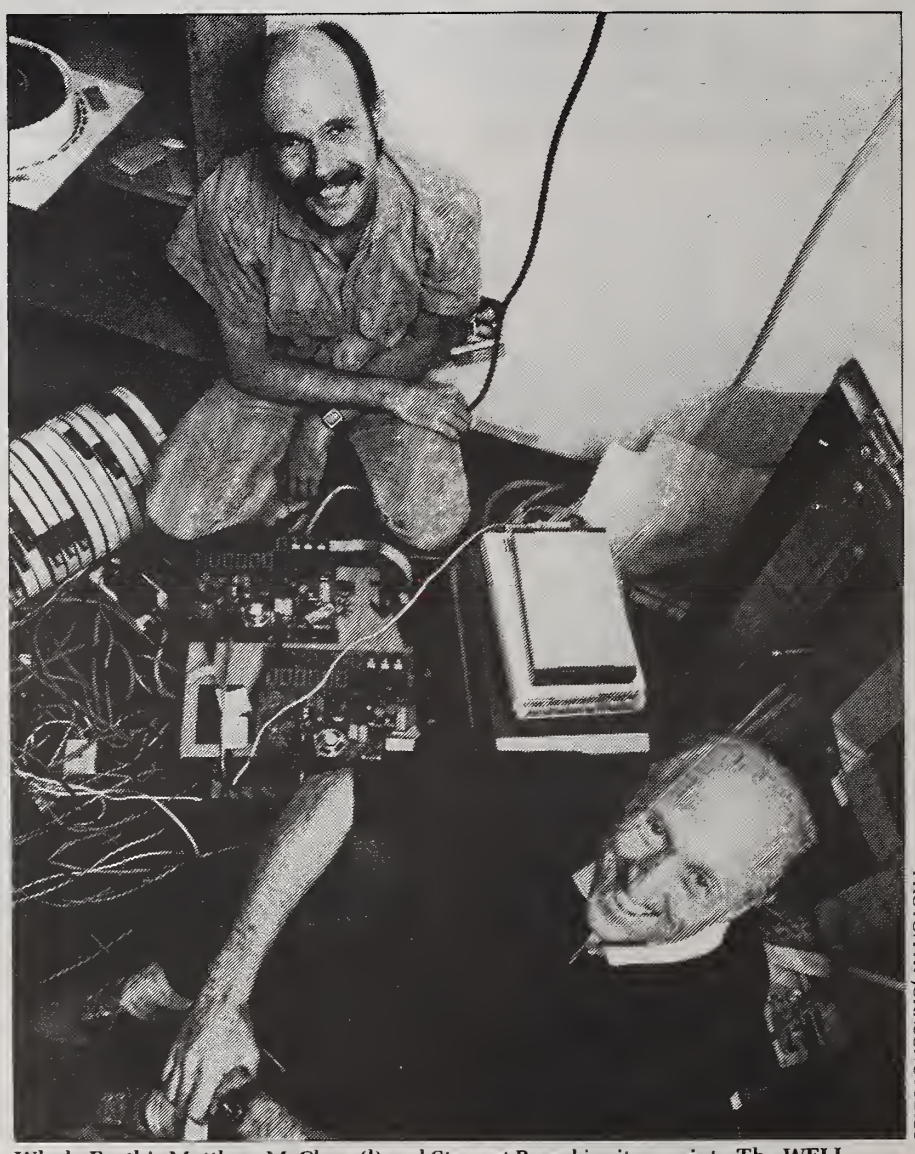

PHOTO: PAT JOHNSON STUDIOS

Whole Earth's Matthew McClure (l) and Stewart Brand invite you into The WELL.

The WELL is poised somewhere between national services like The Source or CompuServe, and special-purpose BBS systems that serve local users and run on micros.

The Electronic Mail function is very straightforward. Messages and responses are routed between WELL users. An exciting feature is the ability to route mail to and from users on certain other telecommunication networks. Links are rapidly being built to various national and international systems.

You can transmit (upload) regular (ASCII) text files and store them on The WELL. Any other WELL user can read or capture (download) such a file if they know the file name and user ID of the file creator. This feature allows conference conversations to direct readers to external files that might — for example — hold a list of local events relevant to that conference. It also allows a group of people to work together on the development of a co-authored document. Additionally, special facilities allow the transfer of binary files — so The WELL can be used to transmit graphic images as well as public domain software.

Using basic features of The WELL is relatively simple. Ample prompts and HELP notes are available to aid the novice. An on-line Manual can be downloaded and printed from your computer. Each conference has a host, who—like a good host at a party — assists newcomers, keeps relevant conversations flowing, and directs irrelevant conversations to more appropriate conferences. New hosts are welcome.

The response time is very fast. Unlike any other BBS we've tried, it gives no reason to wish for more speed.

We found The WELL to be a very friendly place — not just an easy to use computer system, but quite literally — a place where one might make some very good friends.

The price of this service is one of its friendliest features. Its hourly access fee is from one fifth to one tenth that of the Source, and for many of us — authors included — that's a make or break difference!

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The WELL takes more time, but that's the price of power, and there are some incredibly powerful features available to the initiated user. (Space limitations prevent even a partial list.) Continued evolution of the system promises to make more and friendlier power available to subscribers.

The cost of using WELL services is an $8 per month member fee and a very low $2 per hour access fee. These charges are billed directly to the user's credit card account (VISA or MasterCharge). Pacific Bell costs are the normal fees charged for calls between your phone area and Sausalito, and show up on your regular monthly telephone bill. These phone costs can be cut by about 50% by arranging for ORTS service to Sausalito with Pacific Bell. Rates are much cheaper at night, of course. The WELL will soon be accessible via UniNet, TeleNet or TymeNet, which will reduce phone costs significantly. For about $300 you can purchase a lap-top micro with built-in modem that will enable you to communicate on The WELL.

To register with The WELL by computer, call (415) 332-6106 via your modem. As prompted, type "newuser" (lower case, without quotes) as your login ID; then enter your VISA or MASTERCARD number and expiration date. You will then be asked to choose a user identification code and a password. For personal assistance, call (415) 332-4334.

We asked Stewart Brand and Matthew McClure of Whole Earth Access Link about their new venture. The WELL has been up and running since April, 1985, and it seems to be off to a fine start.

Who's behind The WELL, and how did it get started? How did the Whole Earth people and the NETI people get together?

Matthew McClure: When we were putting together the *Whole Earth Software Catalog*, we used telecommunications extensively to gather reviews. We used mostly New Jersey Institute of Technology's EIES network — The Electronic Information Exchange System, a national teleconferencing network. Our catalog authors would send their word-processed documents to EIES. We'd pull them down to our own micro-computers, run them through a couple of electronic transmogrifications, and transmit them to the typesetter. So, that was a lot less work for us. We'd also use the EIES network to hold online conferences, and we met a lot of interesting people. So, we recognized it as a valuable tool. We saw a lot of ways that it could be used that it wasn't being used. And we looked at things like CompuServe and the Source and saw that they were expensive, monolithic, not too friendly, and often very slow. We wanted a regional information utility and conferencing system. Coincidentally, NETI, in Ann Arbor, had this software called *PICO-SPAN* that they had developed, and they were looking for places to put it. Their idea is to set up regional networks like The WELL, around the country, and then to hook them up in different ways, so that you can have some kind of communications in the whole area.

Stewart Brand: I'd known of Larry Brilliant (founder of NETI, who also directed SEVA, a service organization) for years, and so had reason to be interested in NETI. I ran into him at Western Behavioral Sciences Institute in La Jolla, where I was a faculty person, teaching classes on-line for senior corporate people. They would get into the EIES network for two years and meet every six months face-to-face in La Jolla. At one of those occasions, Larry Brilliant was there, and we chatted about NETI, and about his idea for regional teleconference systems. I got very interested because I realized that regionality is something new to the process, that there was a middle ground between BBS systems and the national networks, and that that middle ground is very congenial to the kind of thing the Whole Earth has been at all these years.

The stories Larry tells mostly relate to the work of fighting blindness that SEVA's been doing in Nepal and India the last couple of years. Doing eye operations and logistically horrendous projects, bringing in helicopters to the high mountains. He found that a lot of their coordinations involving technical and political people scattered all over the face of the globe — which would have taken months or years, or been impossible in the past — were able to move quickly thanks to teleconferencing capabilities.

Asynchronous teleconferencing especially pays off when you have a lot of people in different time zones. So he was already sold on teleconferencing as a tool for World Saving, and he thought there was so much commercial potential there that they could fund many of their own service activities by pursuing the commercial opportunities.

MM: So we got together. They were in a position to put up some money so we could get a computer and the software. What we put up, of course, is our expertise, our connections and the people who run the system.

What made you decide to offer a service like The WELL?

MM: In terms of facilitating information gathering, input and participation, teleconferencing is a terrific tool. The Bay Area is an interesting place full of interesting people. Our idea was that if we could facilitate communication among these interesting people, unpredictable synergies would result. And so far they have. Our whole system has gotten several orders of magnitude easier to use, and more powerful and interesting just as a result of our users, who have a wide variety of expertise, and have offered this and that kind of suggestion and cooperation among one another, with the result that it's gotten better, more sophisticated, and easier to use. I think that's wonderful.

SB: The attraction of The WELL to me is that it's the most rapidly adaptable medium — certainly business medium — that I've ever seen or been involved in. That is, once you have the basic apparatus set up, the range of possibilities gets wider every time you think about it. We're trying to establish The WELL as a really open invitation to business people in particular, and everybody in general, to try stuff, to discover new uses for this medium. And this is consistent with what we've done from the beginning with Whole Earth — the idea is access to tools.

So this could be a home for anyone's experiment?

MM: Yup. That's what we're doing it for. To find out what are the possibilities with the teleconferencing. So far they've been fairly limited by the corporate environment. Or, they've been limited by storage capacity, processing speed, and limited number of phone lines. We are working on getting rid of all the limitations we can find, so we can first find out what's possible, and then assess its usefulness.

SB: People who get on are participating in the shaping of the system. Because it is such a flexible, interactive, and populist medium, it's going to be adapted to their realities to the extent that they pitch in.

One of the advantages we have is the software. *PICO-SPAN* is built to be highly adaptable. It has lots of hooks — places where you can attach it to other software that either exists, or that you develop.

MM: For example, we wrote a routine that would give you a list of all participants on The WELL, in alphabetical order. We wrote another routine that would tell you at the end of each session how much time and money you'd spent during that session. There's a lot of different enhancements you can do, writing in either Unix or C, that you can just hook into *PICO-SPAN*.

What happens when and if you get into a space crunch? Though you've got excess storage space right now, it has to run out at some point.

MM: No it doesn't. The economics of the situation, as near as we can tell, are that once we have enough people talking that we run into a space problem, we will have enough money that we can pay for another disk. So, the system is designed to pay for its own expansion.

SB: So, the trick is to keep it growing rapidly enough so that the cash flow makes sense, because it's an expensive system, but slowly enough so that it doesn't get ahead of us to where suddenly people are getting too many busy signals or we just lose control.

You're basically operating from a perspective of plenty, which assumes "there is plenty of room now, we can afford to buy more as we need it, and we can serve all needs. Businesses ... individuals ... just no limits ..."?

MM: That's right. We haven't run up against the limits yet, and we have plans for dealing with most of the limitations that we are aware are likely to come up. So, yes. It's pretty wide open.

Who sets priorities & guidelines for The WELL? How are decisions made, such as what conference subjects are welcome — or internal decisions

Brand: "We're trying to establish The WELL as a really open invitation to business people in particular, and everybody in general, to try stuff, to discover new uses for this medium."

McClure: "The idea is that if you can increase the free flow of information, you'll probably wind up with better decisions being made in the end."

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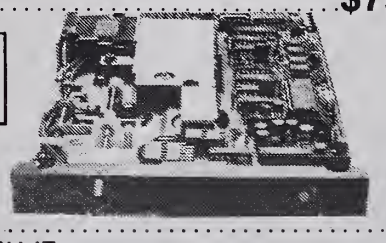

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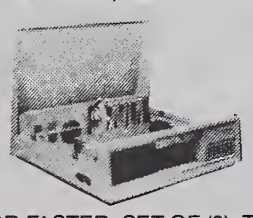

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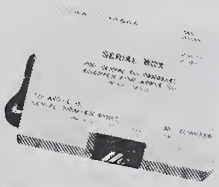

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J

about The WELL?
MM: Mostly that's being done by Stewart and myself. Our main guideline is: if it looks at all interesting, let's try it and see if it works. The whole thing is so amazingly experimental that it's like having a giant sandbox, a pail, a shovel, and water . . . new forms begin to appear. Some of them are strong, and some of them just go back into the sandbox.

What type of inter-active audience do you see this reaching, as opposed to CompuServe or the Source?
SB: I think there will be more very straightforward business use of this system than with CompuServe, for example, because of the very low cost — especially small businesses, or businesses that have a number of regional nodes. That want a good electronic mail system, or a place where they can get together and hash something out without all having to drive to the same place, work through a contract together, all of these collaborative writings that go on.

So you are encouraging businesses to use The WELL as a utility?
MM: Yes. We will be offering a business service that includes two primary features—"E-FORUM" and "E-MEMO." The business class WELL provides excellent teleconferencing and electronic mail systems.

Another thing that we're doing is developing transactional software, so that companies like the Whole Earth Access Store can put their catalog on-line and have people order from them directly through The WELL—home shopping, basically.
SB: . . . and all manner of services that people are performing for one another directly through The WELL. Another business use of The WELL is what they're calling "virtual" businesses. It's a phenomenon that we're starting to see on the various teleconferences, and is based on the idea of virtual memory and virtual reality. These angelic businesses form, a business plan comes out, work gets performed, the various people get paid, and they never have to meet face-to-face.

What other uses do you expect people will find for The WELL?
MM: Some people may wind up creating a private conference to go write a novel collaboratively. That's happening now, on EIES. They have what they call "The Soap Opera" . . . and we may start a Soap Opera conference towards the end of the summer. Also, we want to provide listings of stuff like local movies . . . tell people what's playing at the different theatres, concerts, restaurants.

What about using The WELL to start up a barter network?
SB: Yes. One of the most interesting ranges of software to me has been the DIAL-A-MATCH stuff. The sex software that runs on various bulletin boards in the Bay Area. You have to call in at three in the morning in order to get on, they're so busily finding each other. You can do that with barter or you can do that with people looking for jobs or employers looking for workers — obviously there's a whole range of matching that can be done. And it's especially nice in a regional network, because then you can do the face-to-face part,you can take a look at the thing that's being offered and show them what you're offering back. Sure, barter would be great.
MM: Also, there are different projects that are springing up. Some involve computer projects. Some involve politics. The idea is that if you can increase the free flow of information, you'll probably wind up with better decisions being made at the end.

The way that we hope the system is going to grow is sort of like an epidemic, that people will catch it from one another. And it seems to work that way, because once people discover the magic of electronic mail, they want to contact their friends and get them on-line.
SB: The system should not become characterizable as only one thing, or perceived as just a techie hangout, or a new age hangout, or a business hangout, or a telecommunications nerd hangout, but a place where basically *anyone* will find something, and hopefully *lots* of things. It's just another form of connection. □

Brand: "The system should not become characterizable as only one thing, or perceived as just a techie hangout, or a new age hangout, or a business hangout, or a telecommunications nerd hangout, but a place where basically *anyone* will find something."

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User-Friendly TV: The Affordable Computer Hotline

By Tim Tyler

San Jose's Channel 48 (KSTS) bills itself as "The Vision of Silicon Valley" and "The Computer Connection" — not without cause. Its programming includes several computer-related shows ranging from *Ask The Expert* to *The Computer Show*. But according to sales representative Miles Richmond of KSTS, the most successful show, ranking among the station's top three programs overall, is the Thursday night *Affordable Computer Hotline*.

Affordable Computer, which operates several retail stores in the San Jose area, took over the show's sponsorship several months ago, changing its name in the process from *The Friendly Computer Show*. Originally titled *The Personal Computer Hotline*, the show has been a considerable success since its inception in August of 1983, posting Arbitron ratings of 70,000 viewers on the two occasions the audience was measured in 1984.

In its current form, *The Affordable Computer Hotline* is co-hosted by Affordable's Manny Lucero and Corry Keller (who also produces) and KSTS' Skip Lindeman. It features guests from the computer industry and offers viewers the opportunity to phone in questions, usually at the rate of twenty an hour. Says Lucero, who also manages Affordable's San Jose store, "The questions range from very esoteric things like 'Why isn't my printer able to take a screen dump?' to very generic questions like 'How can a database system help me with my records in such a manner that I can retrieve them quickly?'" He adds, "Obviously, when your phone lines are filled with twenty calls an hour, it's impossible to take every call. But what I've often found is that someone who is out there watching is thinking of a question to ask, but is either unable to get through or crystallize what they want to say in their mind. All of a sudden, another caller phones in with the question they were going to ask."

Hi-Tech Meets The Radio Talk Show: The Famous Computer Cafe

By Benjamin Krepack

You know you've heard those background sounds before. It's that familiar din you hear when you're out on a business lunch or grabbing a quick omelette before heading to the office. It's that clinging and clanging of dishes and silverware that you've grown so accustomed to while sipping a cup of joe and reading the morning paper at your favorite restaurant or cafeteria. But wait...why are these sounds coming out of your radio? And how is it that suddenly you feel like you're eavesdropping on someone else's conversation? You hear Dr. Timothy Leary talking candidly about his philosophies on the information age. You're privy to a discussion with Don Estridge, president of IBM's Entry Systems Division. You're listening to jazz musician extraordinaire Herbie Hancock talk about how computers have changed his music and his life. You feel like you're really getting to know Bill Atkinson, the man who wrote the *MacPaint* graphics program for the Apple Macintosh.

Don't touch that dial, folks. You've just discovered *The Famous Computer Cafe*, the country's first radio talk show devoted entirely to personal computers. Started late last year in Los Angeles, the show can be heard each weekday in Southern California on KIEV-AM (870 kHz at 3:30 p.m.) and KFOX-FM (93.5 mHz at 9 a.m. and 6 p.m.). Due to its unique format, enthusiastic guests and aggressive producers, the show was recently picked up by National Public Radio's Satellite Network and can be heard in Northern California on KCSM-FM (91.1 mHz on Wednesdays at 7 p.m.) as well as in such disparate places as Oklahoma City, Cedar Rapids, Iowa, Champaign, Illinois, and a continually growing list of NPR radio stations throughout the country.

The show is produced by Michael Walker, Ellen Walker and Andy Velcoff. All three of them come from dif-

PHOTO: DAVE LEPORI

Affordable Computer Hotline co-hosts: (l-r) Skip Lindeman, Corry Keller, and Manny Lucero go before the cameras weekly to discuss new products and answer viewer questions.

Since the show is broadcast live, there's always an element of unpredictability. While Lucero says the show is mercifully free of prank callers, there's the occasional member of the audience who's quite vocal in expressing displeasure with a particular manufacturer or dealer. Lucero recalls the disgruntled caller who took issue with Apple's marketing policies: "He bought an Apple II+ right before they came out with the IIe. The guy would like to have been warned that the new machine was coming on the market, because then he never would have bought the II+. I pointed out to him that the reason he could not be warned is because of what happened to Osborne, who lost his company due to the fact that he started talking about the future products while the current ones were still out there. People thought, 'Great, I'll wait until they upgrade the system,' and in the meantime the machines on the market just sat on the shelf." When the caller's reaction to this bit of hard-earned wisdom was to begin berating his Apple dealer, Lucero pointed out that the dealer in such situations is frequently no better off than the customer: "I told him that in this particular case the dealer could not do anything for him, because they sign non-disclosure agreements. In a lot of cases, we're not always told about the changes until the very last minute because it affects our buying decisions."

Despite the occasional awkward moment, Lucero feels that the show benefits callers, dealers and manufacturers alike. "I think one of the things people like about the show is that we have the guts to put ourselves on the line. They enjoy it when Apple puts itself on the line, or any other manufacturer that feels enough confidence in its products and is willing to stand up there and discuss them. Once in awhile the manufacturers are going to get a couple of stones, but most of the time they are able to show off their products in a favorable light."

Guests over the last two years have included representatives of various companies giving product demonstrations and luminaries like Steve Wozniak discussing the state of the computer world. Again, the fact that the show is broadcast live leads to some interesting situations, ranging from Wozniak taking over the show to hapless product demonstrators dissolving in stage fright.

Generally, Lucero finds that viewer reaction is positive, indicating that the show performs a valuable service. "We're trying to provide honest

Serving up behind-the-scenes stories and tasty conversation on The Famous Computer Cafe: (l-r) Michael Walker, Andy Velcoff, Ellen Walker.

ferent places in terms of education and experience. Ellen, a self-proclaimed "IBM brat," has both a father and a stepfather who worked for the Big Blue Corporation. When she got out of college, she naturally went to work for them too. She then got into various advertising and selling positions with other computer companies. Michael's background is drenched in marketing, advertising, and communications, but he has spent most of his time selling everything from copier machines for Xerox to employee health benefit plans for large corporations. Andy has advanced degrees in music and music education as well as a law degree specializing in entertainment law.

"Somehow, we all got this idea that we all wanted to go into business together," says Ellen. "We just didn't know exactly what it would be."

Then, when Ellen and Michael decided to get married, her parents gave them an IBM Personal Computer for a wedding gift. Ellen, having worked on computers before, was able to get it started and boot up a few programs they had. But Michael had a different experience.

"I couldn't make anything come up on the screen," he admits. "I felt rather intimidated."

Michael was confused but not defeated. He started reading computer magazines but those, too, were a bit intimidating to him. "I got this one program called *The Millionaire's Game*, put out by Blue Chip Software," he recalls. "I couldn't get it to work right, so I contacted the company and talked to a man named Jim Zuber, who wrote the software. He was very receptive and he helped me get the program started. It was then that I realized that it's not just software and hardware out there, but real people behind all this stuff. People that were real nice and real interesting."

The three of them then realized that whatever it was they were going to do together, it had to be about computers and the people behind those computers. Ideas of a television show began to jell in their minds, but there were a lot of obstacles to contend with in producing something for TV. Then one day Andy was riding in his car and heard a local Los Angeles radio talk show host ask "Wouldn't it be great if we had somebody who could talk plain English about computers?" The three of them immediately followed up the announcer's rhetorical question, and ended up producing a computer talk show for that same station.

"We produced it, but we had some-

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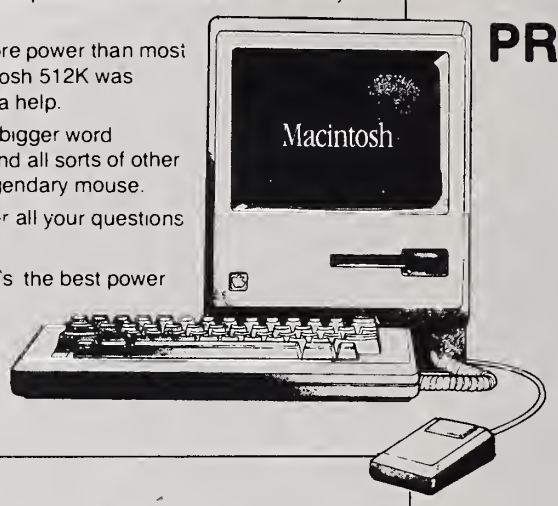

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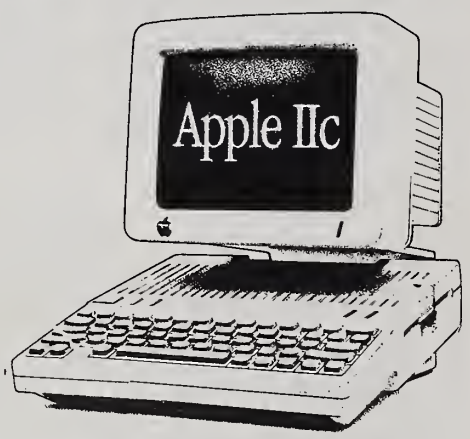

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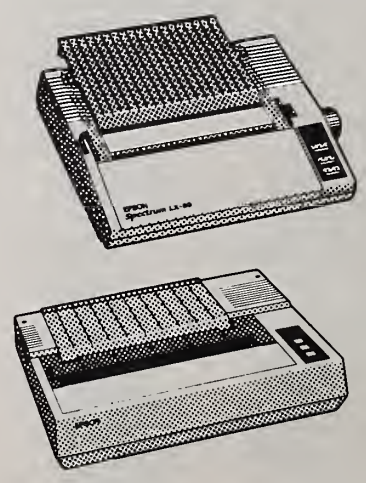

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The Affordable Computer Hotline

information about the things they're interested in concerning computers. People have often said they never would have bought a certain computer if they hadn't watched the show. Evidently one of the big functions of our program is to reduce the anxiety one feels when confronting a computer salesman. The big anxiety most people feel when walking into a computer store is not knowing anything about the system that they plan to spend $2-3,000 on. Then, after watching the salesman demonstrate a computer, the person feels pressure by the salesman to buy the product. By watching a product demonstrated on our show, a person can see how it works and obtain information about it in the comfort of his own home without the pressure of having to purchase the computer. When he finally does go walking into a computer store, he may feel a little bit more on a par with the salesman. In some cases," Lucero laughs, "he may know more than the salesman."

Meanwhile, altruism aside, *The Affordable Computer Hotline* has been good for Affordable itself. Though owner Victor Khodabash says it's too early to gauge the direct effect of the show on the store's sales, he adds, "The nice thing about television is it's a good medium to reach many people all at once, whereas newspapers are limited in that respect." Furthermore, says Lucero, "If the name is associated with a good program over a long period of time, a person will think of Affordable Computers."

At the same time, Lucero is experimenting with the effectiveness of integrating what he calls "institutional advertising" into the Hotline's programming. "We're going to try and see if telling people about a 25 percent software sale in our store this week will help bring customers in. And if it doesn't work, we'll try it again next week."

The Affordable Computer Hotline, says Lucero, "wants to see everybody in a win-win situation. That's been part of my philosophy whether I've been a store manager, a father, or a television co-host. Whatever you do in life, you should somehow structure it so that everybody involved benefits. I hate to see somebody come out ahead because somebody else lost. It doesn't have to be that way."

He adds that the viewers themselves are an integral part of the show and have been responsible for much of its evolution. "In addition to asking questions concerning their computer needs, the viewers often give us advice like 'Your program could use more demonstrations of word processors,' or they've called to inform us about events in the industry. I think if we've done *anything* right, it's that we've listened to our audience." □

The Famous Computer Cafe

one else do it for us," says Michael. "But while we watched it being done, we realized that we could do a better job if we just did it ourselves." All that was left was for them to come up with a unique concept and approach.

"We like to eat out a lot," admits Michael, "and all our brainstorms and discussions about doing the show were done over meals. When we were discussing the format, we thought that what we really needed to do was to create the same type of casual atmosphere that people have when they're sitting around a table and talking over food.

"But there's also a practical element to our concept," he says, "because we knew we couldn't get everyone we wanted on the show over to our cafe, which is basically a soundproof studio. But putting cafe sounds in the background gives us the ability to go anywhere in the world to tape an interview and not be affected by outside noises. It always sounds like it's recorded at the same place."

"Except for the interview I did on an airplane," says Andy. "That time, we had to say we were at the Famous Computer Cafe Landing Strip."

Since the show's inception, the Cafe has hosted over 300 guests including authors, philosophers, programmers, musicians, corporate heads, journalists, professors, publishers, astrologers, and other professionals involved with personal computers in some way. The show also incorporates contests, in which the prizes include entire computer systems. Helping out with the coordination of all these activities in the Cafe is associate producer Ellen Lubin.

"Our basic philosophy," says Michael, "is that when it comes to getting the information on the 'information age' and computer technology, we don't have to rely on third- or fourth-hand information. We want to go directly to the individuals who are really involved with it. And by having these kinds of guests we find ourselves demystifying the world of computers. As long as computers remain a mystery to people not involved in the field, the more these people will feel afraid. We want to get across to those unfamiliar with computers that they're as capable as anyone in utilizing this valuable technology."

"We look at computers as instruments for people to express their creativity," says Andy. "We see these machines as something that helps people be more of who they are and helps people communicate with one another, as opposed to this technical thing that separates people."

"We're what you call Digital Dee Jays," says Michael. "Other disk jockeys spin records. What we spin is information." □

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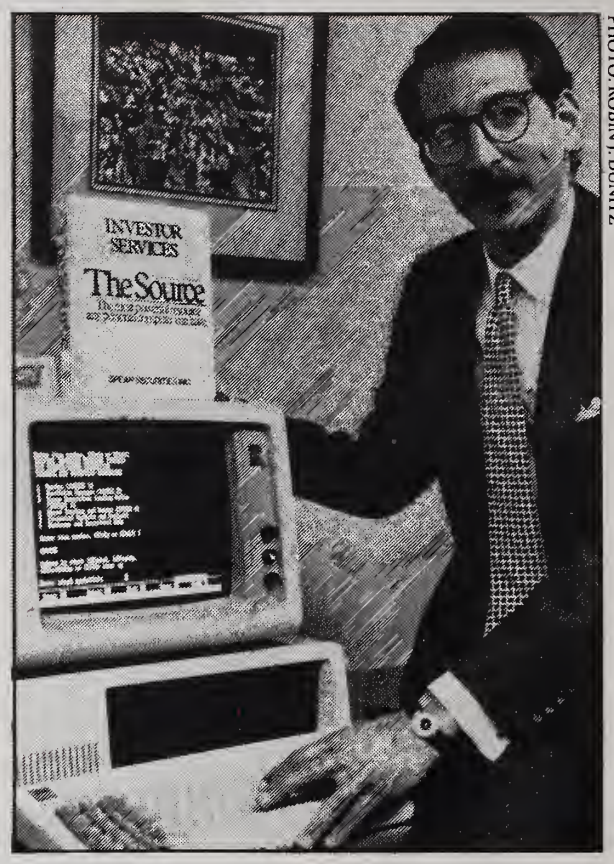

PHOTO: ROBIN J. DUNITZ

Ira Belsky, executive vice president of Spear Securities, with the firm's latest feature in stock trading.

"The electronic delivery of investment information and transaction services is the next step in the evolution of Wall Street," says Charles M. Spear, chairman and chief executive officer of Spear Securities, Inc., a new and unique Los Angeles-based discount brokerage. Most brokerage houses and many institutional investors, such as banks and insurance companies, have already spent millions of dollars bringing in computer technology for their own use, thereby gaining instant access to stock quotes, financial news and anlysis.

Now Spear Securities, a member of the National Association of Securities Dealers (NASD) is offering similar services to individual investors, thus helping to "level the playing field," according to Spear Executive Vice President, Ira Belsky. In November Spear took that next step, becoming the first company to specialize in automated security transactions for the personal computer user. The company, which is fully licensed by the Securities and Exchange Commission (SEC), currently provides services to over 1100 clients, and is adding 10 to 15 or more each day.

This new service was developed jointly by Spear Securities' parent, Investment Resources and Technology, Inc. (IRT), a publicly-owned company specializing in electronic brokerage services, and Source Telecomputing Corporation, operator of The Source, one of the country's leading information networks.

Anyone with a computer, modem, communication software, and membership in The Source can open an account at no extra charge with Spear Securities. Already investors in all 50 states and eight foreign countries have become Spear clients. For those who don't *yet* have a computer, Spear can be reached via their toll-free phone number, (800) 321-6116.

To join The Source, there is a one-time membership fee of $49.95 (often free with the purchase of a modem). Connection time charges vary from $7.75 to $20.75 hour depending on the time of day used. Several California cities have local access phone numbers.

The nerve center of Spear's operation is INSTINET, an automated system developed by Institutional Network Corporation, which enables investors' transactions to be completed within minutes or less, as buyers and sellers communicate and negotiate directly, but anonymously. And they no longer have to be on the exchange floor. Before this new application was developed by Spear's affiliate, Trading Company of the West, INSTINET was primarily used by institutional investors and professional money managers.

While INSTINET represents state-of-the-art investment technology, most brokerages find it too expensive to "retool" their operation, as they already have long-established direct ties to the floors of the exchanges. As Ira Belsky puts it, "We're like Rip Van Winkel, having just awakened. Because we're new on the scene, we can benefit from the newest developments, without being burdened by the older technology which is used more widely."

The automated portfolio system is at the heart of Spear's "Investment Services," as it's called on The Source. A client can have an unlimited number of accounts or portfolios, with each holding up to 200 stocks. Spear also provides IRA, Keogh, margin, corporate and trust accounts.

Spear investors can buy or sell any publicly traded stocks or options listed on the New York, American, or regional stock and option exchanges, or in the Over-the-Counter markets. During regular exchange hours, market orders for up to 1,000 shares of almost 4,000 frequently traded stocks are executed immediately at the best available price.

Two kinds of price quotes are offered, real-time (current) or delayed (15–20 minutes behind real-time). To subscribe to the former, there is an additional $20 charge added to each monthly Source bill. Investors no longer have to feel guilty about calling a busy, impatient broker to find out how their stocks are doing.

Another valuable feature, which is especially appreciated when April 15th gets closer, is a table showing Realized Gains and Losses, providing the exact information required for federal income tax returns. The information in this table is immediately and automatically updated each time a transaction is completed.

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Besides its trading services, Spear Securities, in conjunction with Source programmers, has designed easy on-line access to The Source's constantly expanding library of business and financial information. For instance, by entering the name of a company, a potential investor can get all recent news stories, either just the headlines or full texts. It's also possible to analyze price/earnings ratios, to learn whether insiders are buying their company's stocks, and to compare all companies within an industry.

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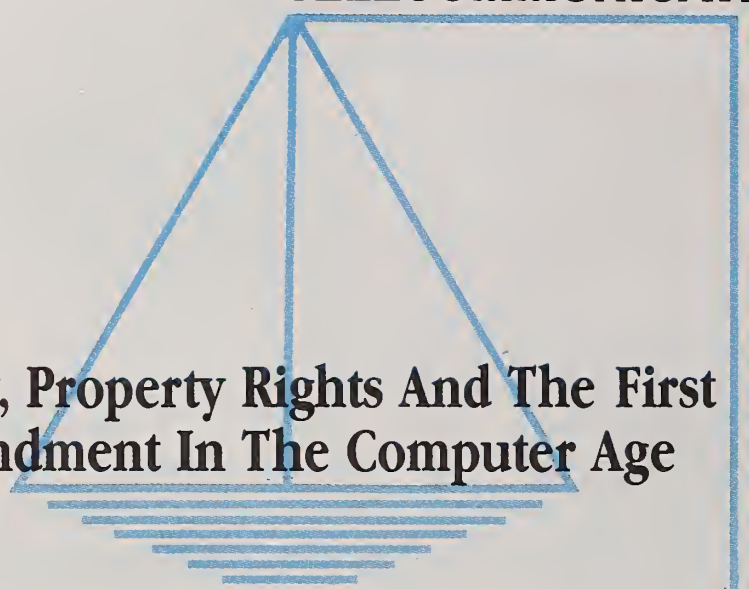

Privacy, Property Rights And The First Amendment In The Computer Age

By James Evans

As a personal computer bulletin board operator, or "sysop" as it's known in the trade, Thomas G. Tcimpidis didn't think he was doing anything wrong by establishing and maintaining a board out of his Los Angeles home.

In fact, the electronic board was such an accepted member of the household that the 33-year-old television engineer and computer enthusiast often failed to make a complete inventory of its changing contents for weeks at a time. Also, like the more than 1000 operators across the country and the hundreds of others in Canada, he was virtually anonymous to the many thousands of computer users, who, with a telephone and the proper computer equipment, freely tapped into his and other systems to gather and exchange opinions and information. But Tcimpidis' telecommunications habits and anonymity, and the habits of many fellow operators, were suddenly shaken last year on May 16.

On that date the police raided Tcimpidis' house, confiscated $20,000 in computer hardware and data storage disks, and elevated him to a *cause celebre* in the intensifying controversy over how to legally define and control (if control is even possible), the existence and use of information stored in computers. The issue has stirred state and national politicians, supported by such diverse groups as the American Telephone and Telegraph Company, the National Rifle Association and the American Civil Liberties Union, to sponsor legislation in an attempt to achieve the often contradictory goals of broadening public access to information while protecting rights of private property, privacy and free speech.

An electronic bulletin board is comparable to any supermarket bulletin board with cards tacked to it, except that on a computer the capacity for holding information is vastly increased. "The board was equivalent to all four walls of a supermarket, inside and out, being covered with print the size of a classified ad," explains Tcimpidis' attorney, Charles Lindner of Lindner and Swartz in Los Angeles, a criminal lawyer who handled the case *pro bono*, or without charge. "In three years more than 100,000 messages were left on the board," he says.

Among those messages were two telephone credit card numbers, which avid computer bulletin board users had illegally shared with each other to cut their own costs in tapping into national and international computer systems via the telephone network. Pacific Bell Telephone Company investigated Tcimpidis' board and charged that he was knowingly publishing the private credit numbers. The police arrived and Tcimpidis was arrested for "intent to defraud and publishing with intent to use," a misdemeanor section of the Penal Code enacted in the early 1970s specifically to stop trafficking in sto-

Meanness At The Speed Of Light: The Darker Side Of Hackerdom

By Michael Wiesenberg

Henry David Thoreau was once persuaded by a friend to leave Walden Pond to see the first steam locomotive pull into Concord, Massachusetts. When the train arrived at the station, his friend said, "See what progress we have made!" Thoreau replied, "But it may only be a case of meanness going faster." Says erstwhile blue-boxer John Maxfield, referring to the information about all of us stored on computers and the ease with which determined hackers can gain access to much of it, "Meanness now travels at the speed of light."

* * *

Picture this: Every night, teenage "phone phreak" Wild Cat takes a stolen telephone and headset to a deserted phone booth on the edge of a small Northern California town. He unscrews the cover to the junction block where the line goes into the booth and connects his equipment. Sitting comfortably on the grass outside the booth, he sets up illegal teleconference calls, talking for hours to phone phreak phriends all over the country phor phree. (Phone phreaks seem to have an aversion to fs.) One night, a policeman hiding in a tree signals, and the entire police force of the town, riding in the four cars that form the fleet, drives up. Wild Cat, trying to run away, is brought up short by the cord of his headset hardwired into the booth.

* * *

Stainless Steal Rat is up a pole, trying to wire himself directly into the overhead phone lines. He is using a lineman's safety belt for the first time. He doesn't know enough to lean back to keep the spurs dug in, and painfully slides 20 feet down the splintery pole into the arms of a waiting telephone security agent.

These and other teenagers would not have been caught had it not been for the efforts of a former "phone phreak," now a telephone and computer security consultant from Detroit who keeps tabs for the government and private business on underground hackers and phone phreaks.

John Maxfield, born in 1941, became a telephone enthusiast early. He and a friend built the first-ever "black box" in 1957. When the possessor of such a device received a call from a pay phone, he flicked a switch and, at the end of the call, the caller got his money back. This was because the box sent a pulse into the line that registered on the phone company's equipment as the recipient's phone ringing but not being answered. Black boxes worked only on direct dialing equipment, which, in 1957, was available only in a few East Coast cities. Maxfield received a black box call in September, 1958, from Media, Pennsylvania, to his home in Ann Arbor, Michigan, which may have been the first interstate phone phreak call.

The first "blue box" discovered by the authorities was confiscated in a police raid on a bookmaking opera-

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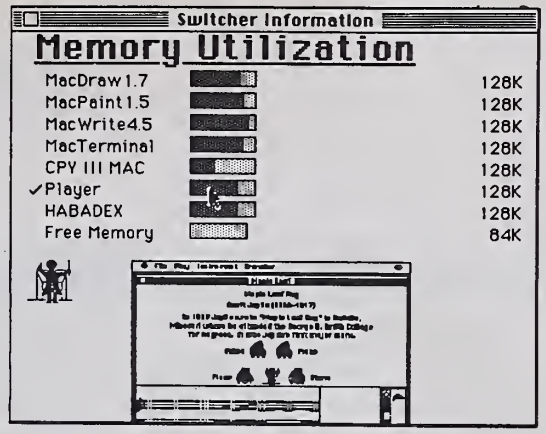

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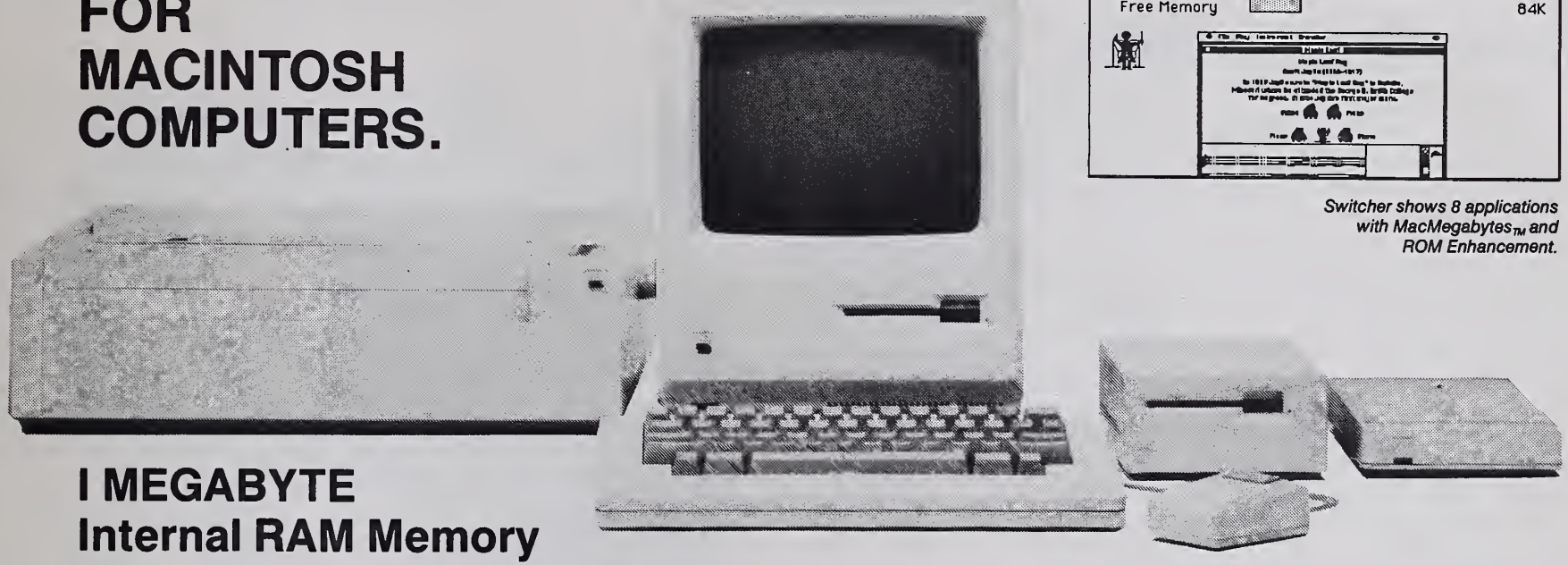

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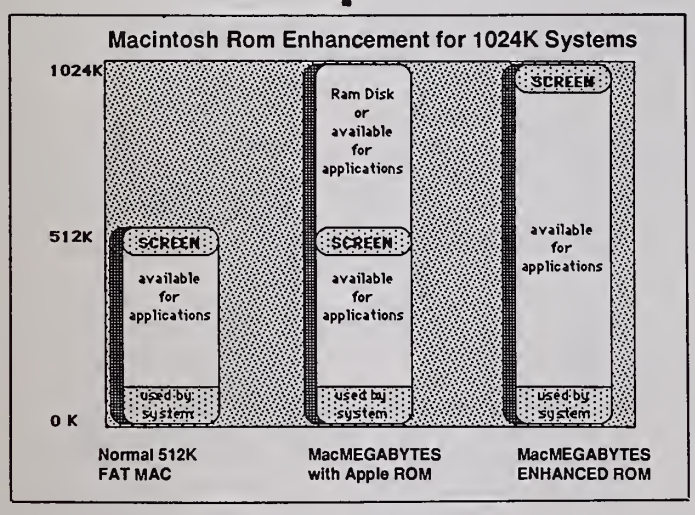

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Privacy, Property Rights

len credit card codes.

Tcimpidis pled not guilty, arguing that he operated the bulletin board as a public service and never published anything. His computer and accessories were returned after the Los Angeles city attorney dropped charges against him on February 7 for lack of sufficient evidence. Yet his case is merely the most illustrative of several that have spurred a debate raging from Congress to the state house.

At issue amid a host of complex legal concerns are the futures of the videotex and computer industries and the rights of individual privacy and free speech. "The phone company only lost $50 to $80," says Lindner. "What's at stake here is a revolutionary form of free speech." He explains that now an average person for the first time can communicate inexpensively with millions of people across the country within hours. Since Tcimpidis was arrested, he continues, the chilling effect on the computer community, and especially on the operators of commercial and public access bulletin boards, has been enormous.

That claim is buttressed by Noel Adler, the chief law assistant in the Suffolk County Supreme Court in New York, who also manages CompuServe's Forum, a commercial bulletin board on which the legal profession can discuss contemporary issues. "Computer users were outraged," he says, "and sysops are fearful that they will be held responsible for what others put on the boards. A lot of public boards have now gone private, and questionable messages have been removed."

At least one state legislator is concerned and is seeking to ease the chill. Assemblywoman Gwen Moore (D-Los Angeles), chair of the Utilities and Commerce Committee, which has responsibility for the telecommunications industry, has introduced ACA 9 to extend to the electronic information industry, including boards operated by individuals, the same constitutional protections against unreasonable searches and seizures enjoyed by the print publishing industry. According to Bob Jacobson, a legislative aide in Moore's Sacramento office, the bill will create ground rules for the computer information phenomenon, "making protections explicit rather than implicit." He considers the bill to be an important counterweight to a 1979 Penal Code statute that makes it a felony to "maliciously access" any computer system for the purpose of fraud, theft or destruction of information.

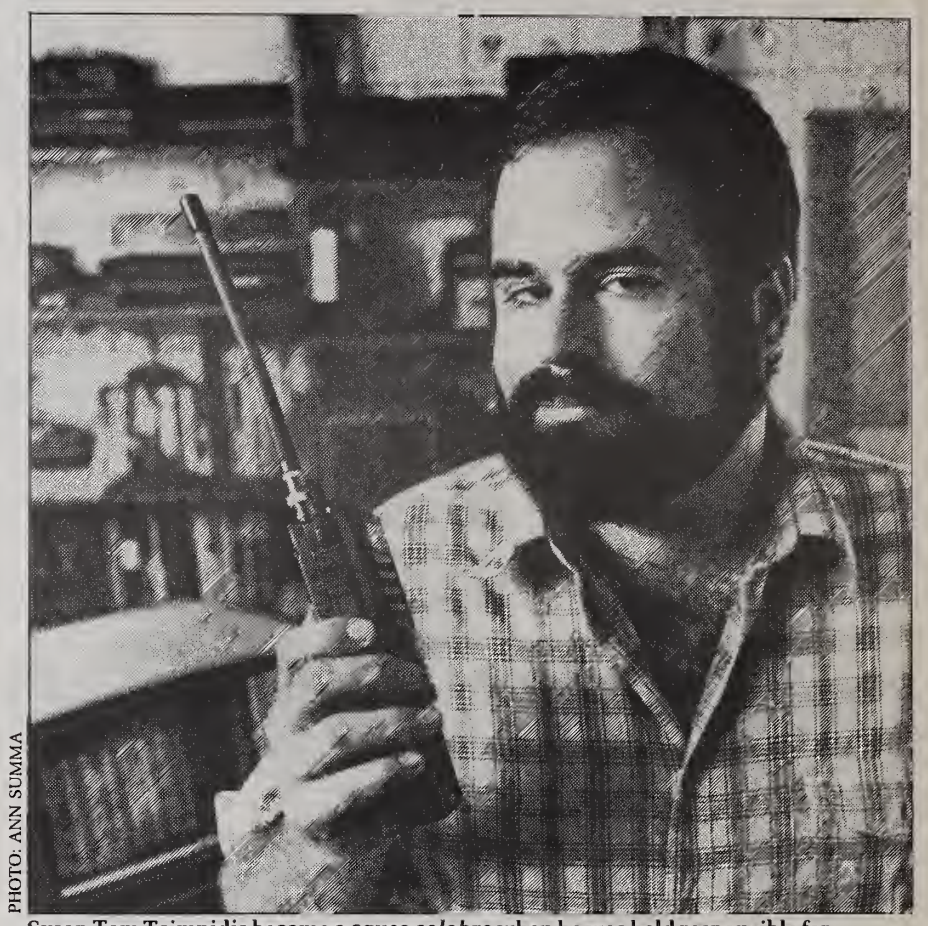

PHOTO: ANN SUMMA

Sysop Tom Tcimpidis became a *cause celebre* when he was held responsible for illicit credit card numbers on his bulletin board.

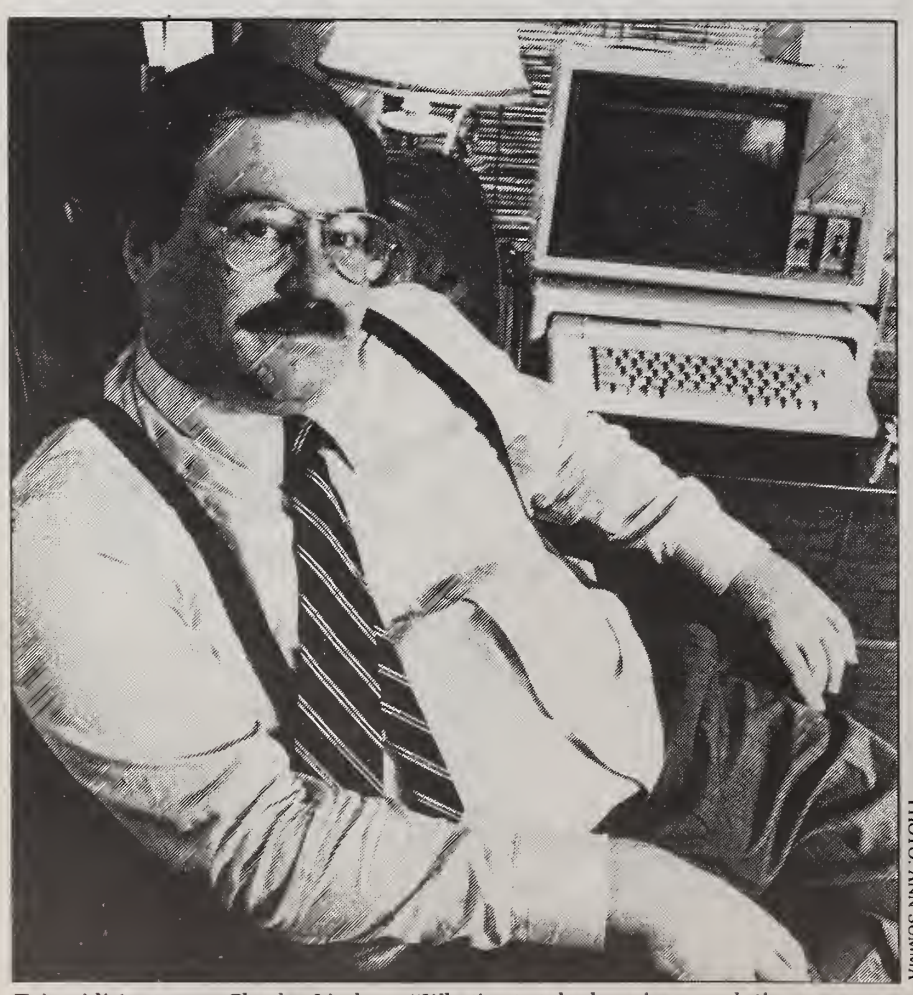

PHOTO: ANN SUMMA

Tcimpidis' attorney Charles Lindner: "What's at stake here is a revolutionary form of free speech."

Another emerging consideration that neither politicians nor the courts have yet addressed is who is responsible for electronic information that is libelous, criminal or obscene. If bulletin boards are regarded as simply distributors of information, such as the phone companies, then a sysop can't be held responsible for the content of messages left by other people. Yet if the board is considered to be a publication, which was the pretext for raiding Tcimpidis' house, then its owner would be responsible for everything that appears on it.

Not everyone, however, believes that latter attitude to be all bad. "I don't agree that criminal charges against people like Tcimpidis will limit the activities of bulletin boards," says Jonathan Joseph, a senior associate in the San Francisco law firm of Rosen, Wachtell & Gilbert, and a contributing writer to several computer publications. "Operators have to be aware that other people have rights too. Technology is changing the facts of the crime a little, but it's essentially the same as taking the carbon copy of a credit transaction and using the number. That information can be distributed quicker now, but the technology doesn't make it any more proper. Operators will start to be more careful as the crack-downs increase," he predicts.

Joseph, however, is more concerned about the increasing ability of computer users to break into data banks and steal information, including credit card numbers, thus challenging the rules of both private property and privacy. "This isn't being addressed nationally," he told an interviewer for a legal publication in February. "A kid in Poughkeepsie getting into a Southern California computer—how can you sue? There's no federal across-the-line statute on this."

He laments that the right to privacy in computer records, such as credit information, finally is federally protected, yet the violation is a misdemeanor. "Counterfeiting credit cards is now a felony," he explains. "But it's not a felony for a New Yorker to access a California bank with instructions to transfer money to Switzerland. Laws covering transfer of stolen property across state lines are pre-computer," he continues. "Use of electronic impulses to take information, as opposed to physical taking of tangible property, is legally a far different and unaddressed thing. Some cases actually hold that electronic impulses are not tangible. We need some clear federal guidelines."

Ironically, Joseph adds that "hackers" aren't the primary problem in cases of unauthorized data access. "The concern," he says, "is insiders selling passwords," which is not necessarily regarded as a crime. Corporations could be sued by shareholders for

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Privacy, Property Rights

lack of security, he notes, in the wake of a major theft of information. "This could be a class action for a breach of a company's fiduciary duty to protect shareholder assets. This is simple corporate law, but technology has made the problem far different."

Sharing Joseph's concern, national legislators increasingly are becoming aware of the potential computers hold for undermining property and privacy rights. Barely a decade after the Federal Privacy Act was passed, a coalition of House and Senate members from both parties are urging Congress to confront the consequences of new, personal technologies. Computers, they're beginning to realize, make private banking, medical, credit and other records unprecedentedly vulnerable to invasion and exposure, with few legal protections to make them more secure.

late and draw more and more people into the fray. Days before the Tcimpidis case was dropped, Sprint-GTE in Burlingame, a competitor in the long-distance telephone communications industry, announced that computer users across the country had pirated a California customer's credit number and rung up more than $55,000 in calls.

Tom Bestor, a company spokesman, says that Sprint had some leads and will seek restitution when the culprits are identified, adding that he supported Pacific Bell in their charges against Tcimpidis. "We have a full-time security department to deal with attempts to compromise the system, and we too will prosecute if any of our credit numbers are discovered on bulletin boards," he vows. Bestor notes, though, that Sprint is aware of potential trouble, and has installed a more sophisticated computer to detect when telephone codes have been breached.

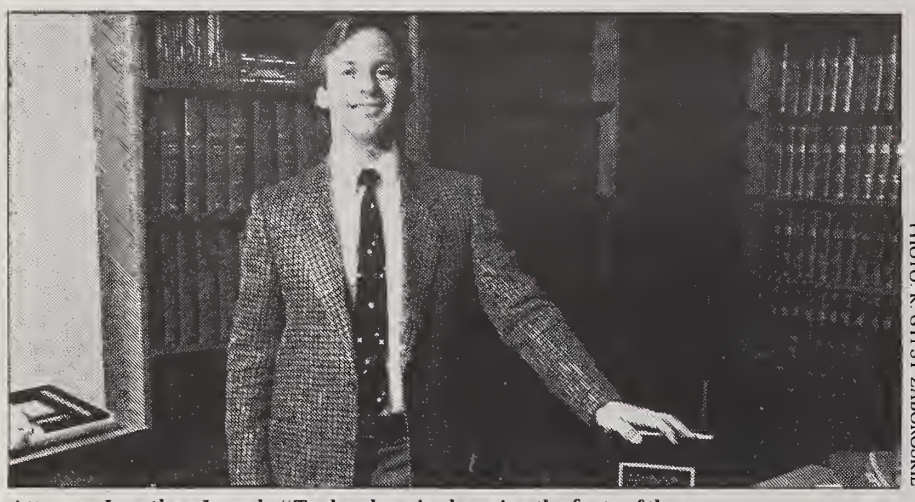


PHOTO: K. GYPSY ZABOROSKIE

Attorney Jonathan Joseph: "Technology is changing the facts of the crime a little, but it's essentially the same as taking the carbon copy of a credit transaction and using the number."

Representative Glen English (D-Oklahoma), chair of the Government Operations subcommittee, has introduced a bill to create an independent agency to help preserve individual rights of privacy before they're trampled by a stampede of technology. The American Bar Association even has taken a role in the widening dispute. In October the ABA's Section on Individual Rights and Responsibilities sponsored a conference in the nation's capital to discuss both the failings of the Privacy Act and what can be done to shore it up against future incursions facilitated by computers and other electronic devices. The ABA, however, also aided Lindner in the Tcimpidis case, as did many other volunteers in the legal profession, including some sheriffs in Arizona who operate a law enforcement board and admit that they can't keep track of everything on it.

What this all adds up to is a controversy that promises only to escalate and draw more people into the fray.

Meanwhile there have been some positive repercussions from the Tcimpidis affair, namely that the public and the legal profession are now more aware of the problems accompanying technological progress. "Computers are at the cutting edge of the law," says Lindner. "There's lots of political and legal interest in this, and it's providing a lot of comment."

His pro bono effort also provided him with some personal benefits. "I found out about the case on the bulletin board," he says, "and then I put a notice on CompuServe's legal Forum bulletin board, and within 72 hours 500,000 people across the country had my message. Later I held a conference with computer security specialists on Forum to discuss strategy, and 200 to 300 lawyers and judges participated. What other means could an attorney use to have access to so many legal minds?" □

Proposed Telecommunication Laws

These proposals are currently pending in the California state legislature, in the Assembly and Senate respectively.

Assembly Constitutional Amendment No. 9
Assemblywoman Gwen Moore

First — That subdivision (a) of Section 2 of Article I thereof is amended to read:

SEC. 2. (a) Every person may freely speak, write, publish, or electronically communicate his or her sentiments on all subjects, being responsible for the abuse of this right. A law may not restrain or abridge liberty of speech, press, or electronic communication.

Second — That Section 13 of Article I thereof is amended to read:

SEC. 13. The right of the people to be secure in their persons, houses, papers, ~~effects~~, ~~and~~ *and effects, including* electronic information systems and data bases, against unreasonable seizures and searches may *not be violated; and a warrant may not issue except on probable cause, supported by oath or affirmation,* particularly describing the place ~~or electronic information system and data base~~ to be searched and the persons and things to be seized.

~~An electronic information system is any combination of telecommunication and data/processing devices and procedures used for the collection, manipulation, and distribution of information. A data base is the information organized and maintained with an electronic information system.~~

Senate Bill 1012 (excerpts)
Senator John Doolittle

(b) Any person who intentionally accesses or causes to be accessed any computer system or computer network for the purpose of (1) devising or executing any scheme or artifice to defraud or extort, or (2) obtaining money, property, or services with false or fraudulent intent, representations, or promises, is guilty of a public offense.

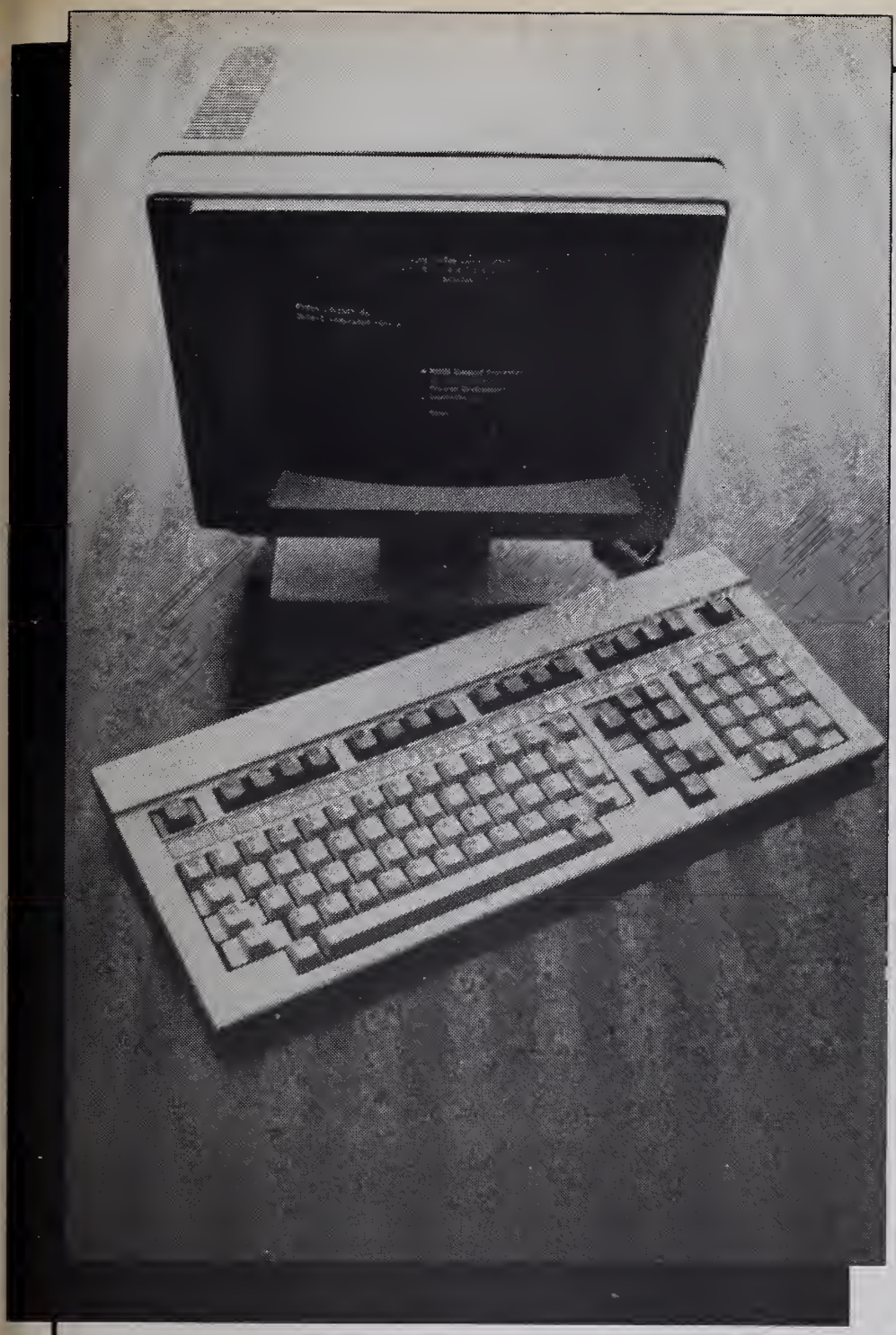
(c) Any person who maliciously accesses or causes to be accessed any computer system or computer network for the purpose of obtaining unauthorized information concerning the credit information of another person or who introduces, or causes to be introduced, false information into that system or network for the purpose of wrongfully damaging or wrongfully enhancing the credit rating of any person is guilty of a public offense.

(d) Any person who maliciously accesses, alters, deletes, damages, destroys or disrupts the operation of any computer system, computer network, computer program, or data is guilty of a public offense.

(e) (1) Any person who knowingly places a telephone number or address not listed in a public telephone directory, personal identification number, computer password, access code, credit card number, debit card number, bank account number, ~~address~~, or other personal or private information *of a person, other than the owner of the information,* on a computer bulletin board or otherwise makes the information available electronically to the public without the prior written authorization by the owner of the information is guilty of a public offense.

(2) Any owner or operator of a computer bulletin board who knowingly permits the ~~placement~~ *maintenance* of a telephone number *or address not listed in a public telephone directory, personal identification number, computer password, access code,* credit card number, debit number, bank account number, address, or other personal or private information *of a person, other than the owner of the information,* on a computer bulletin board or otherwise makes the information available electronically to the general public ~~without the prior written authorization by the owner of the information is~~ *once having been notified that it is private or personal information is* guilty of a public offense.

(f) Any person who intentionally and without authorization accesses any computer system, computer network, computer program, or data, with knowledge that the access was not authorized, shall be guilty of a public offense. This subdivision shall not apply to any person who accesses his or her employer's computer system, computer network, computer program, or data when acting within the scope of his or her employment.



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Darker Side Of Hackerdom

tion in Brooklyn in 1961. The device was painted blue and sealed in epoxy so its circuitry could not be copied. It had been built by a high school student. The second seized blue box was built by a college student in Washington State, while the third was made by a California high school student.

In 1961, Maxfield became the fourth person to be apprehended by Ma Bell for electronic blue-boxing. Shortly before he was caught, Maxfield was approached by someone he now suspects of having had Mafia connections with an offer to buy 1000 black boxes for $350 each. He went so far as to build a prototype, which his contact was trying out when the Bell security man who tracked him down warned Maxfield that he might be approached by the mob, and that his life would be in danger if he made anything for them. Maxfield immediately requested the return of the device, saying that Bell was onto him, and threw it into the Huron River.

That was the first step in his change from phreak to hacker buster. In 1963 he befriended a Detroit youth who owned a black box and had friends who built blue boxes. Still concerned about the trouble one could get into on the wrong side of the law, Maxfield convinced the young man to surrender his equipment to the phone company, after winning a promise from the investigators that in exchange for cooperation they would not prosecute. Seven phreaks using those devices were arrested, and the ringleader got a year in jail. The gang had been breaking into schools and businesses to steal telephones and typewriters, and the phone fraud was only incidental. Charges were dropped against Maxfield's friend.

Maxfield first became aware of computer breakins in 1979. He had maintained his interest in electronics by setting up an electronic equipment installation and repair business and joining an early computer users' group in Detroit. In 1979, he managed one of the first experimental electronic mail systems. A school district computer was accessed for instructional purposes during the day by high school students and at night by computer hobbyists. In 1980, student hackers raided the machine, attempting to destroy administrative files. Maxfield countered by devising a hacker-proof log-on system. Before the system was perfected, a young hacker attempted to alter the school's private files. When he failed, he began to bombard Maxfield and school authorities with obscene messages. Maxfield had modified a copy of *ELIZA*, the program that simulates a psychiatrist conversing with a patient. On one of the youth's forays, he reached, not Maxfield, but the program. While the kid thought he was conversing electronically with the manager, Maxfield was actually on another line having the call traced. This was his first act of counterespionage.

Former phone phreak John Maxfield now assists law enforcement in its attempt to apprehend computer criminals.

Having heard that the FBI was conducting an investigation of computer piracy (illicit copying and distribution of copyrighted software), Maxfield offered his services as provider of information. He was amazed to find that the Detroit branch of the Bureau had little familiarity with computers. He had to explain to the first agents he contacted what computer bulletin boards were — even what modems were and how they worked! While the FBI normally conducts its own investigations, the agents had insufficient knowledge of the world of hackers and phreaks to enter it themselves. They asked Maxfield to monitor a few local bulletin boards.

Among the many innocent computer boards, which function as the online analogues of users' groups, Maxfield found a few pirate boards, some with their own security systems rivalling those of the computers their members attempted to infiltrate.

This is a world inhabited mostly by teenagers using pseudonyms that often brag of their telephone or computer wizardry. Tom Tone traffics in stolen telephone service access codes.

Maxfield scoffs at Bill Landreth's setting himself up as the ultimate hacker, when he himself was caught without knowing how.

Red Rum specializes in cracking supposedly uncopyable software. Trashmaster logs onto insurance company and university computers leaving messages like "John Lennon Lives" and "Rock 'n' Roll Never Forgets" in private files.

To gain the trust of the young hackers, Maxfield adopted the name Cable Pair. (Telephone cable consists of many pairs of wires, each pair being one phone line.) Because of his electronic knowledge and experience with phone phreaking, he won their confidence, and was soon invited to join many of the exclusive bulletin boards. The most exclusive, and devoted to the most mischief, had inner circles to which members were invited only on presentation of stolen phone codes or information about illicit computer or phone activities. Maxfield soon found that he was able to help in the behind-the-scenes tracking of teenagers who penetrated supposedly secure systems all over the country.

Bill Landreth, a member of the Inner Circle, a group of teenage hackers who had been illegally accessing GTE Telenet and Telemail, its electronic mail service, was busted by the FBI in the fall of 1983. Known as "The Cracker," he has written a book about his exploits, *Out Of The Inner Circle*. Maxfield takes exception to some of the information in that book.

Regarding the so-called "hacker ethic," Landreth writes: "No Inner Circle member will ever delete or damage information that belongs to a legitimate user of the system in any way that the member cannot easily correct himself." Maxfield finds this attitude one of extreme arrogance and egotism, assuming as it does that the hacker is able to repair his modifications. Of course, if a teenage hacker accidentally trashes a file, and knows relatively little about the system he is invading, what then?

Maxfield feels that the book attempts to whitewash the Inner Circle in general, and Landreth in particular. For example, Landreth casts aspersions upon another group that received wide publicity, the 414s, who made headlines when they crashed

continued on page 100

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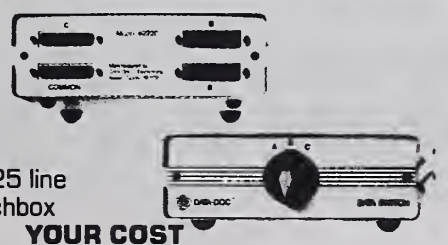

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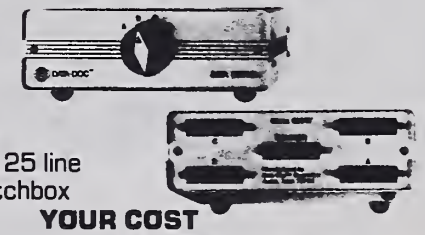

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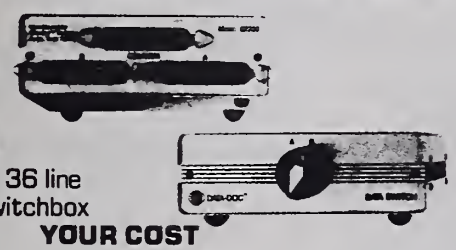

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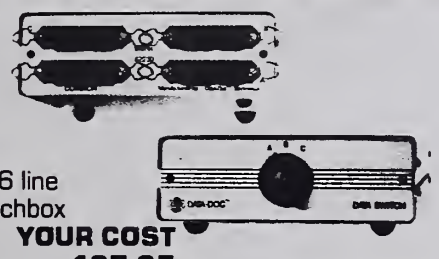

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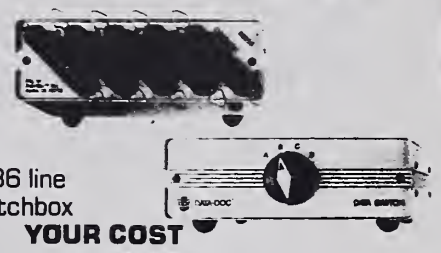

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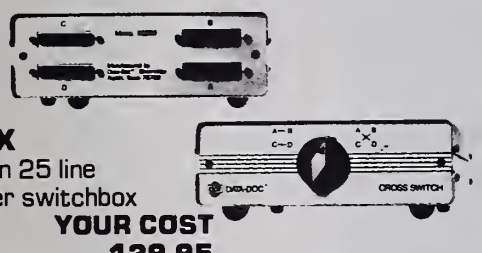

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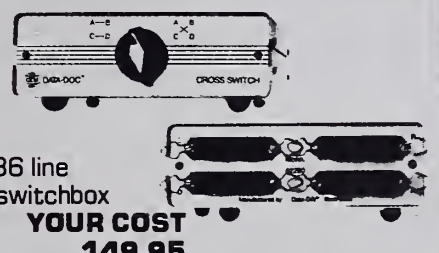

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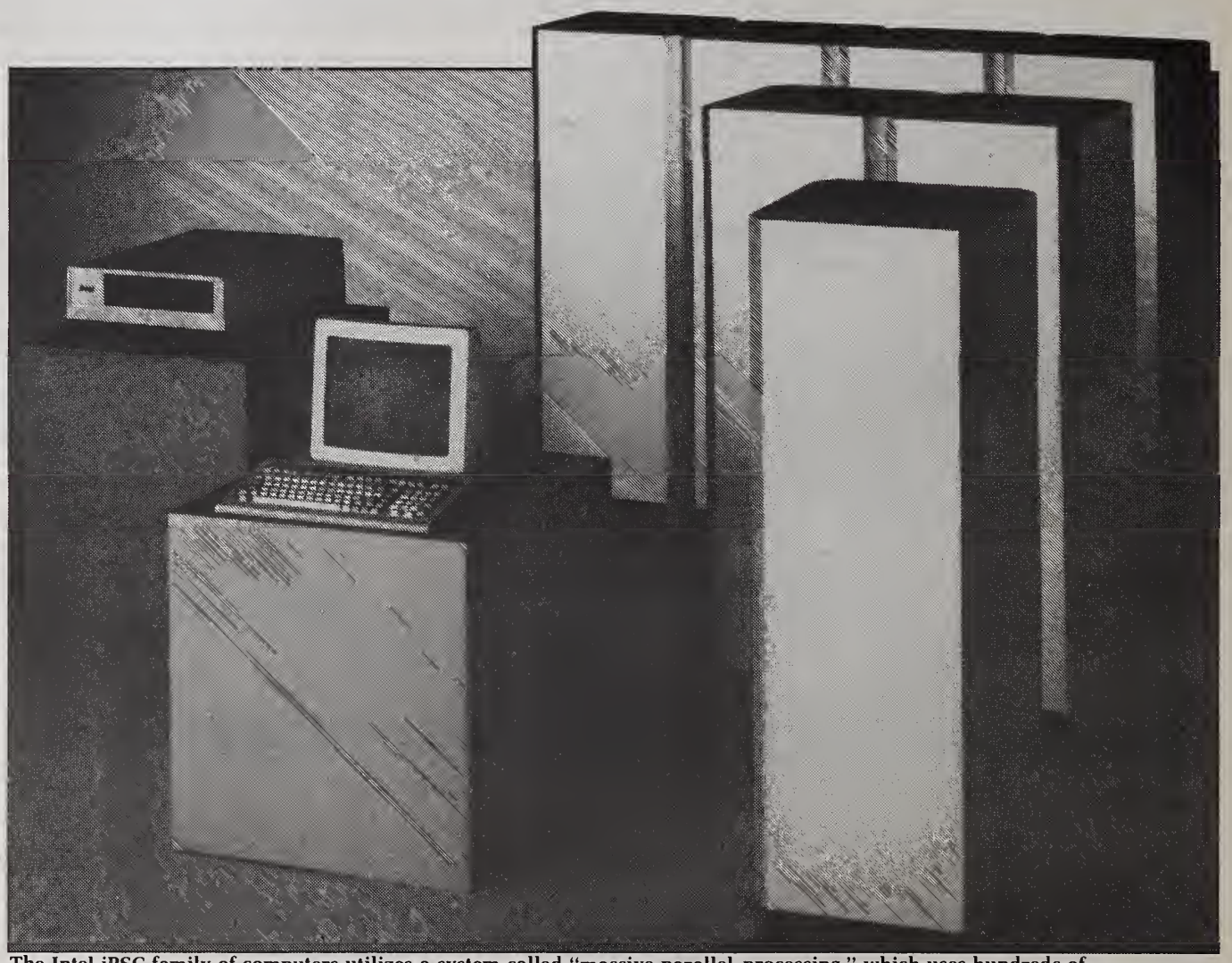
And Now For Something Completely Different:

THE SURGE IN SUPERCOMPUTERS

By Jack Epstein



The Intel iPSC family of computers utilizes a system called "massive parallel processing," which uses hundreds of microprocessors in a single machine.

Supercomputers — the fastest and most powerful machines on today's market — have suddenly become one of the hottest items in the computer field.

In a matter of just a few months, both established and start-up companies are drawing millions of research and development dollars to further supercomputer technology. This is a remarkable turnaround considering that supercomputers have been one of the least commercial computer products and that fewer than 120 exist worldwide.

"Two years ago nobody knew what it was," said Tom Hoog, a spokesman for Denelcor, a Colorado-based company which has recently sold several supercomputer systems. "But during the last six months, interest has been unbelievable."

Supercomputers perform complex calculations on large volumes of data. Where conventional mainframes take hours or even days to solve such problems, supercomputers take only a few minutes.

The fastest can spew out up to 1,000 megaflops, or 1 billion floating point operations per second. A floating point instruction is where the decimal point "floats" from place to place as each calculation is performed.

A meteorologist, for example, might use a supercomputer to compute up to an estimated half-trillion calculations in order to predict a ten-day weather forecast.

The pioneer of the supercomputer was Seymour Cray, who introduced the Cray-1 model in 1976. His Minnesota-based Cray Research Inc. is the current international frontrunner, having captured two-thirds of last year's market.

The most avid customer has been the United States government, which employs supercomputers to design armaments, gather intelligence and forecast weather. Of this share, the most systems have been delivered to Los Alamos National Laboratories, which uses the high-powered machines for nuclear weapons research.

Prices for the machinery are exorbitant, ranging from $8 – 20 million each. Nevertheless, total supercomputer sales ran only $500 million in 1984, according to Forbes magazine.

So why the sudden interest for a product that appeals to an abstract scientific audience rich enough to afford its steep prices? Consider the following:

- Start-up companies are developing machines at a more affordable price;
- Supercomputers are becoming more flexible and new applications have opened up in the automotive, aerospace, electronic circuit design and film animation industries;
- A few of the start-up firms are using a new design called "massive parallel processing," which they contend is not only more economical but more efficient;
- The U.S. government has spurred interest by granting a $200 million grant (via the National Foundation of Science) to four major universities to develop supercomputer technology.

Start-up companies are sprouting up across the country, offering machines that are about one-quarter the speed of the Minnesota king of the hill, but at one-fourth the price. Dubbed "crayettes" or baby supercomputers, these models are beginning to proliferate in the virtually untapped lower-end market.

"The technology is finally coming of age," says Sandy Gant, associate director of InfoCorp, a Silicon Valley analyst firm. "But the real issue behind the sudden interest is that the price is dropping."

Prices range from $150,000 to $500,000 dollars, but critics warn that you get no more than you pay for. "You have to be very careful when you buy these smaller machines," says Dick Whitcomb, spokesman for Amdahl, a Sunnyvale-based company that sells Fujitsu supercomputers, one of the fastest machines on the market. "The cheap price means zero if the customer can't do the problem."

Hoog, however, argues that the Colorado company's product features a flexible building-block approach that enables the customer to buy as much supercomputer power as needed.

Representatives of the Scientific Computer Systems (SCS) of Wilsonville, Oregon, claim a different guarantee: a model with industry-proven Cray architecture and compatibility with more than 200 Cray software programs.

"Cray gave us the permission and licensed the software to us," says Carl Haberland, the company's director of marketing. "They have been very helpful."

According to Haberland, Cray gave its blessing to stimulate the lower-end market in hopes that it would lead to more sales at the upper end, where Cray intends to stay.

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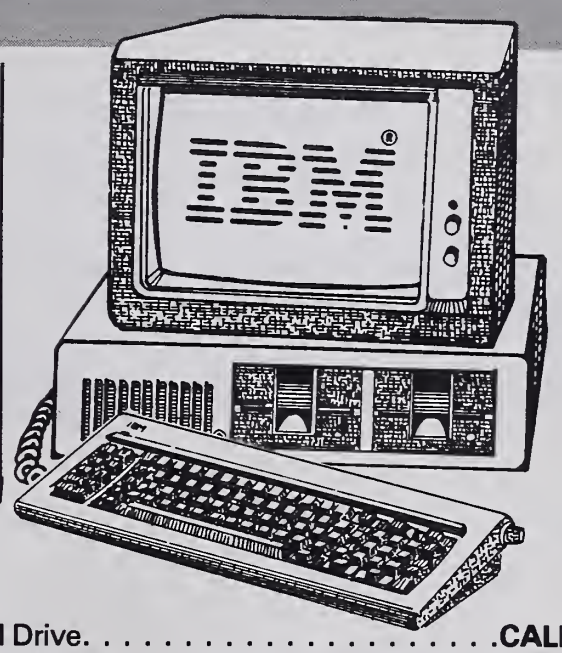

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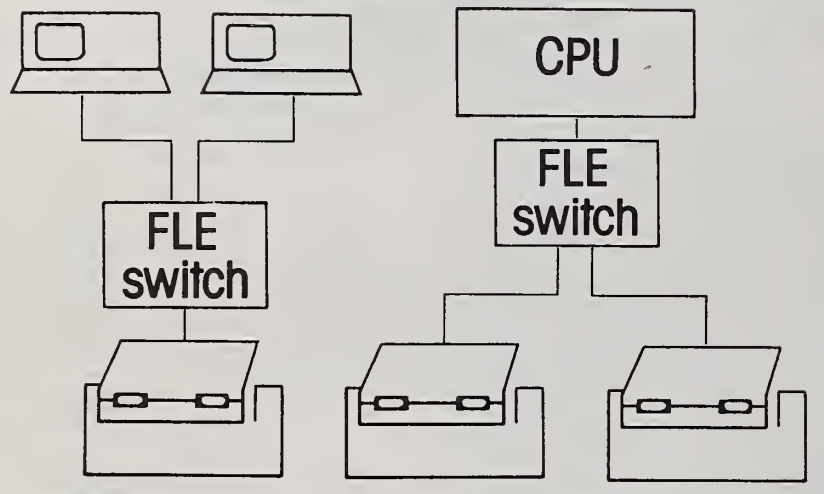

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A Cray spokeswoman in Minnesota says that company executives worry very little about the baby supercomputer boom. "We should benefit by their existence," she says. "We are not in competition with them." But in a recent interview with *Fortune* magazine, Cray Chairman John A. Rollwagen suggested a different story. "The place we have to watch out for competition is the woods of Oregon."

Aside from SCS, Oregon supercomputer companies include Floating Point Systems — the pioneer of the "crayettes" — and Intel Corp., both based in Beaverton. "That quote by Rollwagen put us on the map," says Christopher Wain, marketing communications account manager for Intel.

Intel — along with Denelcor — has opted not to copy Cray architecture. Instead, it uses a new design called "massive parallel processing," which corporate officials claim is the wave of the future. While most supercomputers rely on a single processor, Intel machines use hundreds of microprocessors in a single machine. In theory, that system divides a problem into hundreds of parts and then doles out each one to a separate microprocessor.

Developed at Cal Tech, the system has been advertised by Intel as the first commercial example of a low-cost concurrent processing computer; prices range from $150,000 for 32-node processing units to $520,000 for 128-node processors.

Another start-up company, Convex Corp. of Richardson, Texas, which uses Cray architecture but not its instruction set or operating system, says its $500,000 Convex C-1 will be the most popular system because of its mobility. "Its small size allows it to be taken into the field," says marketing communications manager Denise Burrows. "And it consumes less than 4000 watts of input power as opposed to Cray's 100,000 watts. We are looking to be a $100 million company within two years."

All the above companies are devising applications that they hope will appeal to a gamut of industries. With affordable computers, they say, scientific researchers will begin to use computers rather than laboratory models in their experiments. Oil company scientists, for example, use supercomputers to simulate the shape of an oil basin, and thus detect a major deposit. Automobile manufacturers use them to simulate test drives and car crashes without building models. Aerodynamicists — who currently constitute the largest commercial market — study the effects of air currents on airplanes by simulating wind tunnels.

Supercomputers are also used to create three-dimensional special effects for science fiction films. A Cray model, for example, was used to create the special effects for the movie, *The Last Starfighter*.

Interest peaked this year after the National Science Foundation (NSF) granted four universities a $200 million grant to develop supercomputer technology. Nicknamed the "supercomputer U's," the schools are Princeton, Cornell, the University of California at San Diego and the University of Illinois at Urbana/Champaign.

The technology is coming of age, but the real issue is that the price is dropping.

Private corporations are expected to contribute as well. IBM has already given $30 million in equipment and personnel to Cornell to develop the largest massively parallel system in the world. The University's goal is to devise a computer that can run at the unbelievable speed of 40 gigaflops, or 40 billion floating-point instructions per second.

One spur for both the U.S. government and private corporations is stiff competition from Japan. During the past two years, three Japanese companies — Fujitsu, Hitachi and NEC — have entered the market.

"If these Japanese manufacturers are successful," said Cray's John F. Carlson, executive vice president and chief financial officer, before a Senate Subcommittee of Energy Development and Applications almost two years ago, "we can expect to see a computing revolution that could further threaten U.S. industrial competitiveness."

Despite those fears, only Fujitsu — which boasts that its machine is easier to use than a Cray and IBM compatible — has entered the American market. It has yet to sell a single machine through Amdahl, its U.S. partner.

Back in Chippewa Falls, Wisconsin, supercomputer pioneer Seymour Cray is holed up in his laboratory working on the first computer to be made from a new semiconductor material called gallium arsenide. If successful, the machine will be five to ten times faster than the current Cray supercomputer and will undoubtedly send both domestic crayette and Japanese high-end engineers scrambling back to their drawing boards. □

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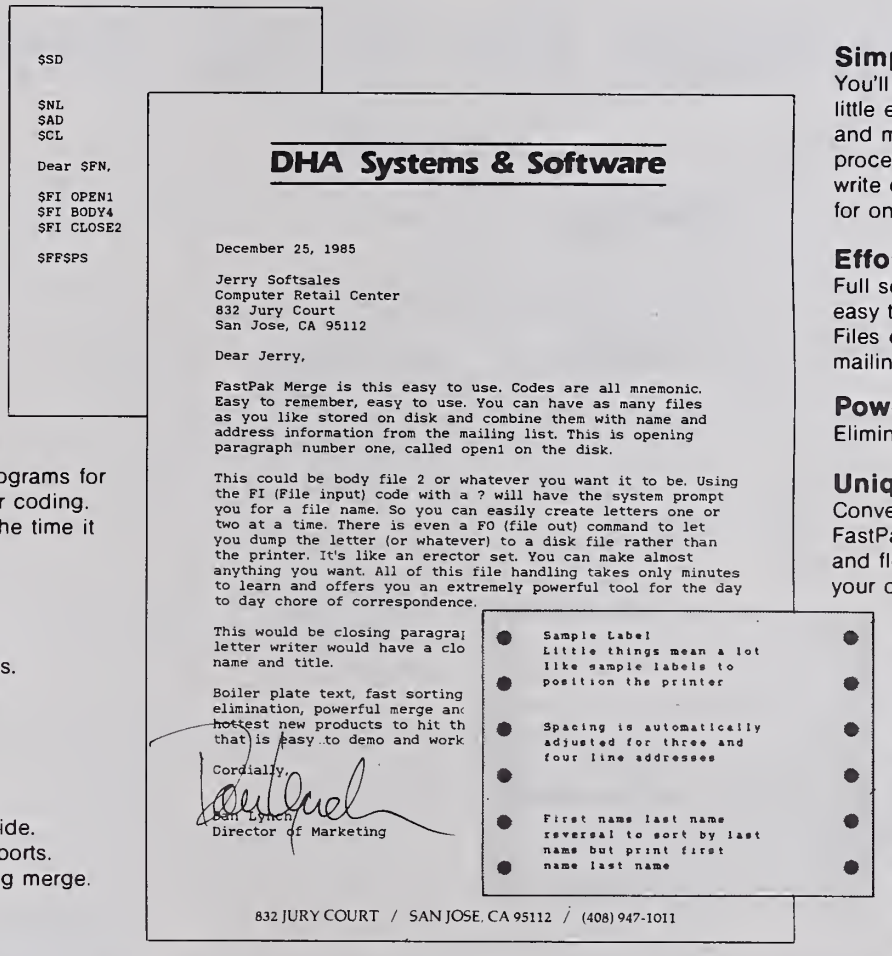
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CONSULTANT – A Definition For Small Business

By L.K. Engelhart

Why should you hire a computer consultant? After all, most vendors of hardware and software claim to consult with you at no extra cost if you buy their product. And just what is "computer consulting" anyway?

The media frequently reflect our uncertainty over this question and over the term "consultant." An article in *Forbes* quotes a partner in an alleged consulting firm. "When a customer called two times to learn how to operate his program," he said, "we lost money." This firm is selling software; since it can't afford to teach and advise its customers, it is not "consulting."

A special advertising supplement by the Association of Data Processing Organizations, which appeared in *Business Week*, offers a useful definition. It defines a computer service as one whose consultants help clients plan and select tools that meet their needs. Consultants with such skills are in demand, for few companies, says John Diebold, an internationally known management consultant, "... have the technical competences or planning frameworks to manage impending change well."

Diebold and others know that *management* of change is essential to success and that successful transition must be managed *properly*. To make this happen, it's not enough to simply buy a product. It takes knowledge, which means that management cannot depend upon vendors. Why? Because the vendors are there to sell, not advise.

From the customer's perspective, the overpowering characteristic of the computer world is uncertainty. Most of your associates are still convinced computers are a fad, expensive playthings that serious business people don't have time for. Others one-up you with success stories about computerizing it themselves. Salespeople demonstrate understanding of esoteric technologies but they obviously don't know, or care, much about business. There are just too many indistinguishable products to choose from, and the ones you choose are too expensive. You pick a product that seems to offer what you need but you can't afford the time it takes to get it to work effectively. The media are glutted with expensive advertising for products of questionable utility. The customer needs to have a lot more information about a product in order to make a decision to buy or to install the product in an enterprise without dysfunctional side effects.

How, then, can managers compensate for their lack of specific technical or managerial experience when they undertake a difficult organization change? You guessed it; they hire a consultant.

In a recent *Harvard Business Review*, Arthur Turner, who studies effective consulting, describes the consultant's end product. It is, he says, a permanent improvement in the organizational effectiveness of that business. In effect, a consultant becomes a temporary full partner in the business, with responsibility to help implement organizational change.

For dependable expertise and objectivity, you want to choose an individual with the credentials and experience necessary to be accepted as a business partner or trusted member of your management team. You want a consultant.

Can a vendor, whose chief purpose is increased sales, provide this kind of assistance? Not likely. Although the vendor may offer some assistance, the offer is a ploy to convince the customer to buy. True, the vendor gives the assistance to get a sale; unfortunately, it is usually worth exactly what the business pays for it.

A vendor rarely offers unbiased assistance. Why? Say, for example, that a vendor offers to design your office system. If he's forced to choose between his product and your needs, which do you think he'll choose? As long as the product performs as promised, the vendor has met his obligation. A consultant, on the other hand, contracts to meet your specific needs. "Consulting," as Turner says, "is more than just giving advice." A consultant, having mastered a particular managerial or technical environment, presents the manager with a model for performance. If, for example, you hire a computer programmer to consult, you expect the programmer to transfer his expertise as programmer into the organization. If you want advice on management, you don't hire a programmer.

The other valuable quality a consultant offers is professional objectivity, something you're unlikely to receive if you're selecting computer hardware from a vendor. So, in order to have any authority with an employer, a consultant, who by definition offers complete objectivity, should not be selling anything else. A person, for example, who offers both auditing and DP services is ethically questionable.

Now that we have distinguished between a bona fide consultant and a vendor, let me describe how a typical business can best use the services of each. Suppose your business is about to convert a manual accounting system to a small in-house computer. Because you lack experience with computer based systems, and know the problems others have had with automating, you hire a consultant. The consultant will determine your requirements and then design a model of a computer-based system which will satisfy those requirements.

Next, with the consultant's assistance, you request proposals from several vendors, asking all of them to specify how their products would be configured to meet your requirements. Then, you and your consultant evaluate the proposals, eliminating those which don't meet your requirements, ranking those that do. Once you decide which vendors to do business with, the consultant helps you establish working relationships with them and assists while you implement the new routine and adjust to it. After that you'll be able to deal with the vendors and operate the new system on your own.

With this kind of project, a qualified consultant can save you time, money and grief. So you might think vendors would appreciate having a consultant involved. This is not always the case, however. After all, it is a lot easier to sell to a naive buyer. Despite promises of support, when the chips are down, many vendors play their own hands and rake in the money, so a naive manager may lose a considerable amount before learning how to play. An experienced manager, on the other hand, knows how to get performance from his vendors, but if you're inexperienced your best bet is to employ a consultant.

How do you know when you need a consultant? It's like a ship's captain taking on a pilot before entering a harbor. The captain may know the harbor, but not as well as the pilot. The risks associated with entering the harbor are too great to go it alone. Similarly, when a business finds itself in this kind of position, it needs a consultant. But if all the decisions have been made and nothing is left but to carry out orders, there's no need for one.

So who qualifies as a consultant? Not vendors! They can install a product and educate you in its use, but they cannot be expected to give unbiased advice or provide competent managerial or technical expertise. For dependable expertise and objectivity, you want to choose an individual with the credentials and experience necessary to be accepted as a business partner or trusted member of your management team. You want a *consultant!*□

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Commodore's New Machine

By Matthew Leeds

By the time this goes into print, Commodore Business Machines should have its new product line released to the public. Announced at the January CES show in Las Vegas were a new computer and peripherals: the 128 computer, 1571 disk drive, and 1902 monitor. CBM had initially promised to have these in retail stores by May, but production delays held back the release until ... Given the requirements of magazine lead times, I am looking forward into the future and predicting. Assuming you have gone out and purchased an entire system, this is what you ended up with.

The Commodore 128 is a new concept in the home computer industry. In an effort to maintain compatibility with the best-selling Commodore 64, CBM has created three computers in one case. The new 128 is: a C64, a 128K enhanced C64, and a CP/M machine. In its C64 mode it is exactly the same as a traditional C64. No new features, no access to the extra keys on the keyboard, no access to the enhanced display of the 128. Just a plain vanilla C64.

The 128 mode adds 64K of memory for variables, strings, and arrays, as well as leaving 64K for programming. The new keyboard includes a numeric keypad, a true escape key, reset key, cursor keys, and other needed extras. A ML monitor is built into the operating system, as is an enhanced BASIC 7.0. This new BASIC adds some 80 new commands, including the best from Simon's Basic, Super Expander, BASIC 4.0, and the Plus/4's BASIC. Structured programming commands like IF/THEN/ELSE, DO/UNTIL, LOOP, and WHILE will almost eliminate the need for GOTO's. ON ERROR and RESUME should take care of program crashes, and EXIT should save wear and tear on the stack. There is also a full set of sound and graphic commands. No more PEEK's and POKE's.

The screen display options include 40 or 80 column displays, using composite video for 40 column and RGB for 80 column. The 80 column mode does not allow for bit mapped graphics or sprites, but does include 16K of dedicated screen RAM. CBM will supply a cable to allow the use of a monochrome monitor in the 80 column mode. The new 1902 monitor will have composite video, split composite video (rear connector on 1702), IBM style RGB (digital), and analog RGB (for the AMIGA).

The new 128 is a C64, a 128K enhanced C64, and a CP/M machine.

In CP/M mode, the 128 will run CP/M Plus 3.0. You will still have access to the SID chip (for music) and the VIC-II chip (for sprites). This will be a great enhancement to standard CP/M, once developers start writing software to take advantage of the additional hardware (don't hold your breath). The 1571 disk drive will use IBM system 34 format. This is the same format as used by Kaypros and Osbornes, to name a few. This opens up access to thousands of business and applications software packages, including *WordStar*, *dBaseII*, and *VisiCalc*. Thorn EMI has converted its Perfect series for the 128.

The 1571 disk drive will support all three modes of operation on the 128. It is read/write compatible with the 1541, and can be configured for 1541 format while using the 128 in any of its modes. It also can be used as a double-sided 360K drive in 128 mode, or as a 410K drive in CP/M mode. The data transfer rate is increased in 128 or CP/M modes by a factor of 10 over that of the 1541. The 1541 drive may be used with the 128 in 128 or CP/M modes, but it will be at standard 1541 data transfer rates.

You will still be waiting for the Commodore mouse. This has been released in Europe, but may not see the light of day in the USA.

If you are in the market for new software for your C64, take a look at the releases from Human Edge Software, marketed by InfoDesigns. These include *Sales Edge*, *Management Edge*, *Negotiation Edge*, and *Communication Edge*. Other new products to look for include: *Vivastar 64* from Solid State Software, *VIP Terminal XL* (for the 1660 modem), and Oasis Software's *White Lightning*.

There used to be something called "freeware" or "shareware." This is/was software developed by independent programmers, and sold by a unique marketing concept. The software was copyrighted, placed on non-copy-protected disks, and was made available at low cost, or distributed by user groups. If you liked the program, you were asked to make a contribution to the programmer. There usually is/was a title screen with the address to mail the check to. However, now some unnamed software publishing companies are ripping off this copyrighted, but un-protected software, and marketing it as their own. This has caused the "freeware" community to look for another generic name for their product. Suggestions are welcome. So far we have "user-supported software."

For a great example of this type of software, check out *Gemini 64*. Written by Bruce Takahashi, it is one of the finest terminal programs available for the C64. He can be reached at 1523 4th Street, Berkeley, Ca 94710. Suggested contribution is currently $12.00. Or check with your local user group. □

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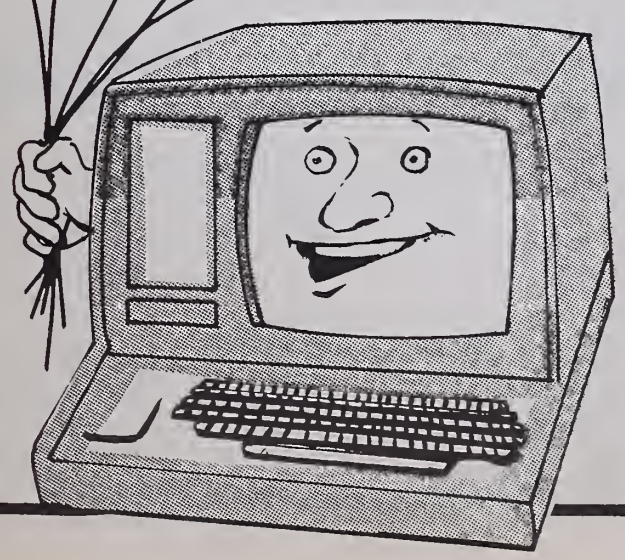

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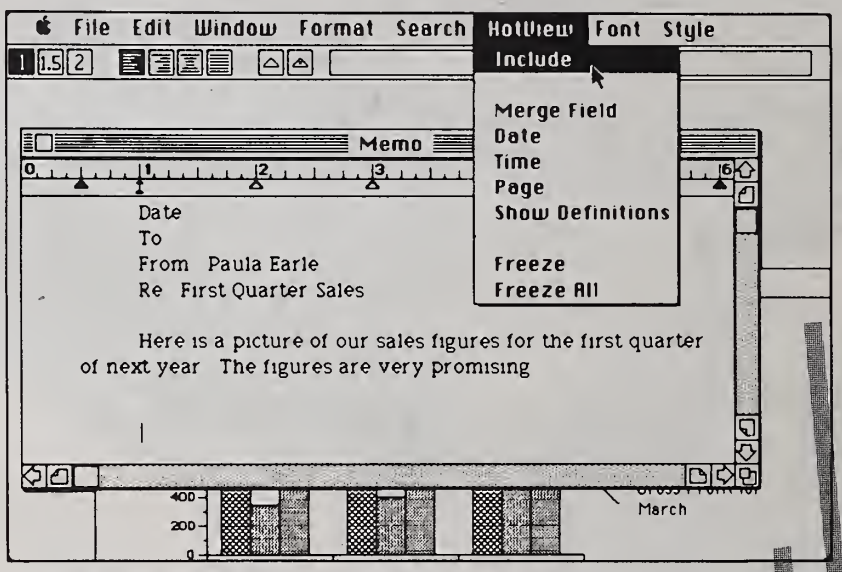
Was Jazz Worth The Wait?

By Barbara Leone

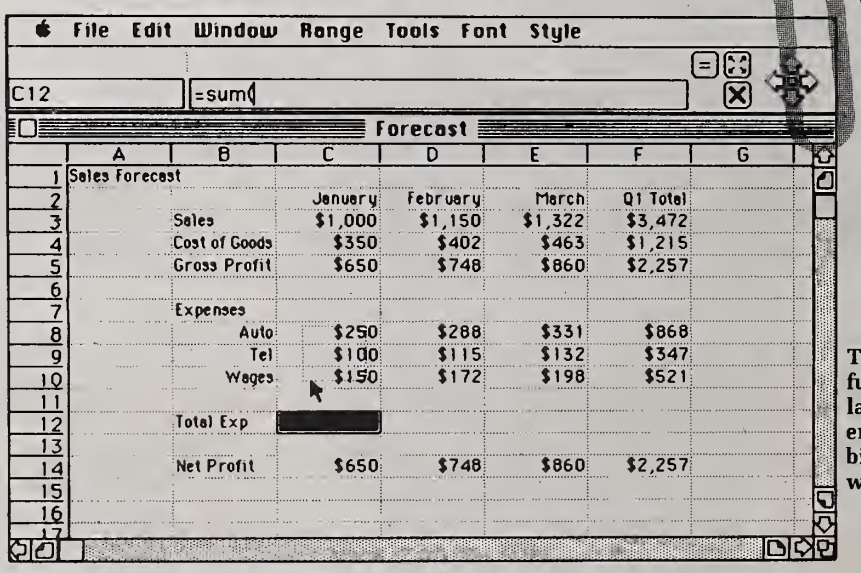
At a pretty hefty price tag, is *Jazz* really worth it? On the whole I would say yes, if you take a number of things into consideration. First, are you in need of an integrated program combining spreadsheet, graphics, data base, word processing, and communications whereby all applications are able to share data between them? If so, *Jazz* is an outstanding solution. Do you already have a spreadsheet, graphics program, database, word processor or communications program? Do you use them in combination with one another, or would you like to? If not, you may think twice about purchasing *Jazz*, especially if all you want is better spreadsheet capabilities.

Just what are the strengths of *Jazz*? The first and foremost strength of *Jazz* is the ease with which it handles integration. For the most part, I wonder if Lotus didn't miss something when it came to evaluating the market for *Jazz*. Without macros, the spreadsheet falls short when compared to those currently flooding the market. The main expectations of potential users were not met with the introduction of *Jazz*. It was expected that this program would be the *Lotus 1-2-3*, or better yet the *Symphony*, for the Macintosh. Unfortunately, it falls far short without macros in the spreadsheet. However, with all the uproar about the exclusion of this feature, Lotus has decided to include macros in a later release. If macros are not a high priority for you, the Lotus spreadsheet overall is extremely sophisticated, and the way it integrates with the other applications is truly outstanding. *Jazz* calls the spreadsheet a "worksheet," and it's the most powerful of all the five applications. It is 256 columns by 8192 rows, having more than 2,000,000 cells. It is capable of 80 math functions. It is possible to open more than one spreadsheet at a time and cut and paste between them. As many as eight windows can be open at one time. The worksheet integrates easily with business graphics, and a change made to a worksheet will automatically update an associated graph with little or no effort on the part of the user.

The business graphics application offers bar, stacked bar, pie, line area, scatter charts, and percent options. The bar chart handles 24 patterns. It is possible to rotate the chart 90 degrees using a Transpose function. There is a variety of fonts available for labeling graphs. On the whole the graphics functions are very well presented and integrated with the other applications. They seem to exceed what is available using *Lotus 1-2-3* on the IBM. Doing the bit-mapped graphics display on the Macintosh in conjunction with a printer such as the Imagewriter, it seems that this module would meet, if not exceed, the needs of most business users for presentation graphics.



Jazz' HotView option allows the user to include spreadsheets, databases or graphics in a word processing document.



The spreadsheet function, while large and powerful, is made a bit cumbersome without macros.

The word processor resembles *MacWrite* except for a unique and powerful addition called HotView. With HotView it is possible to include a spreadsheet, database, or graphics into a document and cause the included information to update as the files associated with it are updated. If you also want mailmerge (that is, to include names, for example, from a database file to do a bulk mailing) this is accomplished very quickly and easily with HotView.

The communications function works well. However, Lotus did neglect to include the export function for taking data from *Jazz* to *Symphony*, *Lotus 1-2-3* or *Multiplan*, but it is possible to import data. Lotus assures me that the export function will be available in a later release.

The *Jazz* disk does not have a Help option. The manuals are very well written, and the Primer manual combined with the Primer disk will give a user the basics for getting started with each of the applications. The *Jazz* program is extremely large! In fact, Lotus needed two disks to get the program running. This is an annoying drawback, since it slows things down considerably. When saving files to a data disk it is necessary to shuffle between disks as though you are operating with one disk drive. The only way around this would be to use the program with a hard disk and save your files there.

So the question is, do the negatives outweigh the positives for *Jazz*? I would say yes, on the whole they do. Many had speculated that *Jazz* would be as popular for the Macintosh as *Lotus 1-2-3* is for the IBM PC. With some of the new spreadsheets being introduced, *Excel* being at the top of my list, Lotus will find the competition in the spreadsheet arena pretty stiff. In all fairness, for integrated programs, assuming the *Jazz* applications contain the right combination for a particular user, it cannot be beat for power, flexibility, and sophistication. So was *Jazz* worth the wait? Only you can decide. □

Barbara Leone is an independent consultant who does training and consulting for the Macintosh and IBM computers.

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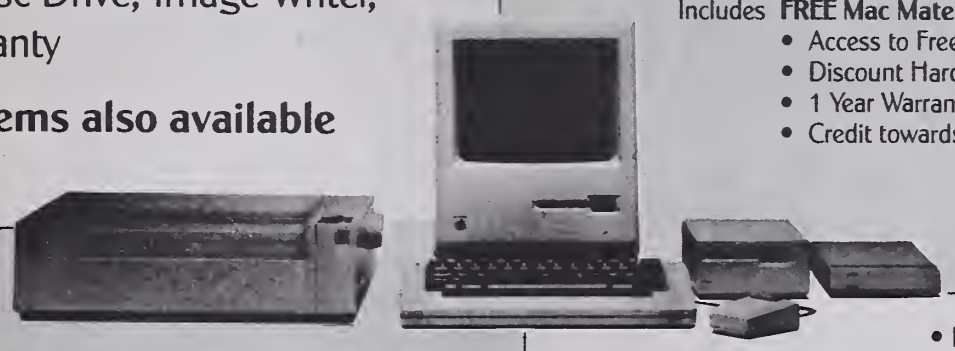

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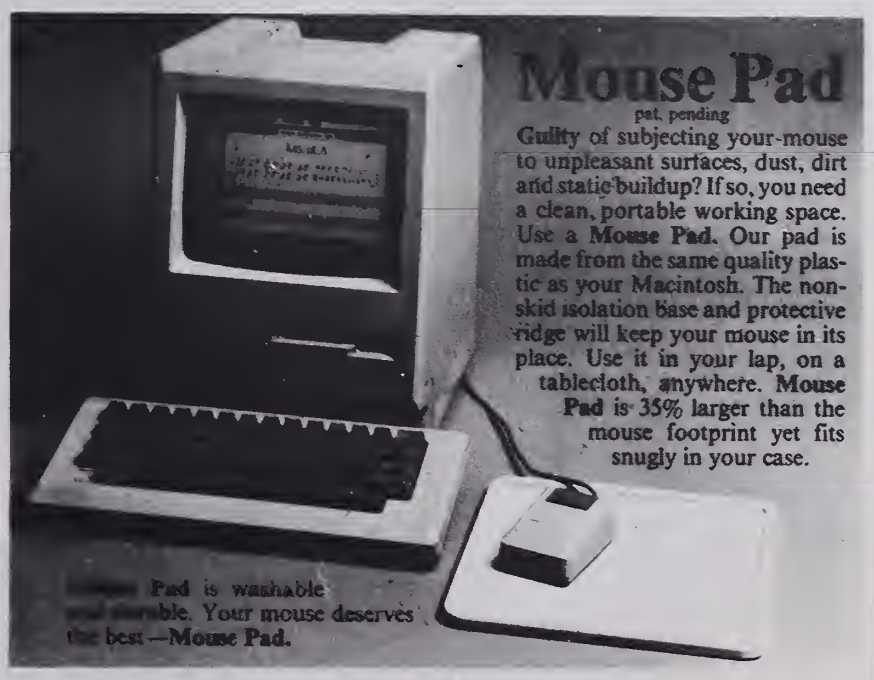

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Making Those Routine Tasks Easier

By Robert D. Athey, Jr.

Let's look into tricks you can use to make your computer an easier tool for you to use. If you use it primarily for writing, as I do, there are some little helps that can cut down on the tedium of setting up. The main thing is to get right to the job at hand—writing.

You received your computer with a standard set of software, and some documentation on both. The next trial was learning to use the machine. Just as Paul Hornung used to say in the beer commercial, "practice, practice, . . ." There's no substitute! Sure, some of the software command schemes are a little peculiar, but they become second nature after a while. If there are help menus in your software, use them frequently. If there is documentation, have it close at hand. Use masking tape to put tabs on frequently used sections.

Ah, yes, documentation! I know experts on computers and their software who are frustrated at the opacity of the supposedly helpful documentation. Sometimes, there is no substitute for for going to the library to find (or a bookstore to buy) a privately sponsored help book. Read any and all available sources that deal with your software. A whole book may yield one line that is just the clue to make your use of the software a lot easier for you.

My uses for my machine are primarily scientific word processing (letters, client reports, magazine articles, book chapters, etc.), and appropriate calculations for that science or my business records. For my purposes, I feel the software delivered with the machine is good enough to do the job, if the user is experienced enough in the software capabilities. That's why practice is the key to getting proficient with the software. My concern is getting the job done, rather than how fast or cute the operation of the job is. But there are tricks I use to cut the dull jobs short.

One such trick is to make up a format "template" for any job you do frequently. That is, your software has a common set of instructions you use every time you make up a letter, envelope or invoice, or even write a term paper. Make up a "template" of those instructions, without filling in the text, addresses, etc., and file it to disk so you can call it up anytime you need to do another letter. I show the file I call "LTR-FORM.MSS" that is the basis for any letter I send out. I take "LTR-FORM.MSS" off the disk into memory, write my letter, and write back to disk with a new file name, usually keyed with the name of the person or company I am writing (i.e. to a local paint company, it is "DAVLIN. LTR").

KEY POINT — Use the "template" only as a temporary beginning point for your construction of a new file. That way the template is never destroyed (except when you accidentally SAVE rather than WRITE your new file, but that's easy to fix).

If your computer has multiple buffers, you can make up the envelope from the letter, with a "copy and move" command. Go to the buffer and call up the envelope template (mine is called "ENV-FORM.MSS", which is shown below). Move back to the buffer containing the letter, and copy the address (not the salutation), and move back to the envelope buffer to deposit the address. Remember to "WRITE" the envelope buffer to the file name you have for the letter (i.e. the letter above would have "DAVLIN.ENV" as its companion).

Now, it doesn't matter that the examples you see are from *Perfect Writer*, as I have used this technique on another machine with *WordStar* as well. I am sure most computers, and, indeed, operating systems can do this.

Another feature of this style of operation is that the family letters, such as the pan-family Christmas letter, can be personalized this way. Since I have three daughters spread across the country, I write them letters that contain a common three or four paragraphs, with one individualized paragraph for each. This templating technique makes that easier.

Now, you have just put some number of new files on the disk, specifically addressing letters and envelopes to some recipients. Print them, with a copy for the file on business letters (family letters need no copies), and DELETE them from your disk. The only files remaining are those which you use frequently. My main business disk contains addressed envelope templates for people I write frequently, my fee schedules, and my standard formatted templates for invoices, reports, letters and envelopes. That disk gets more use than any other (well, maybe my games disk . . .).

KEY POINT — Keep only those files on disk that you use frequently! Something you want one time only, like a letter requesting a sample or some information, should be deleted as soon as it is printed. Keep a copy, in a paper file, if you need a copy .

Even with this good disk discipline, the disk will get cluttered in time. So finding the addressed envelope file on the disk, just to see how you filed it, may be difficult. You can use *NEWSWEEP*, the public domain program I discussed last month, or you can use another directory help from the public domain called *SD-##*. You can obtain a copy of the *SD* from your local users group, or from any number of remote bulletin boards (RBBs) with your modem.

KEY POINT—Get the *SD* program most easily available to you, for alphabetically sorted directories with space usage all in one command.

I would like to hear from users of CP/M machines, to get an idea of what help is needed, to see a new users group, or whatever. You can contact me through *MicroTimes*. □

EXAMPLE OF LETTER TEMPLATE CALLED "LTR-FORM.MSS"

```
@STYLE(SPACING 2 CHARS)
@STYLE(HEADERSPACING 2 LINES)
@STYLE(FOOTERSPACING 2 LINES)        ← Style commands for PERFECT WRITER that
@STYLE(TOPMARGIN 2 LINES)              tell file to set up a letter during the formatting
@STYLE(BOTTOMMARGIN 2 LINES)
@STYLE(LEFTMARGIN 12 CHARS)
@STYLE(RIGHTMARGIN 10 CHARS)
@B(@ADDRESS(          1985)          ← fill in date
@FLUSHLEFT(

Dear ;)⟩                             ← fill in address and salutation
@begin(text)                         ← fill in text of letter
@B(
⟩
@end(text)
@B(@ADDRESS(Sincerely,
Robert D. Athey Jr.))
@newpage
@include(B:              .env)       ← fill in filename for envelope file on disc
```

If you write a lot of letters using a particular format, setting up a template can save you a lot of repetitive keyboarding

TEMPLATE FOR ENVELOPE FORMAT DISK FILE NAMED "ENV-FORM.MSS"

```
@STYLE(HEADERSPACING 2 LINES)
@STYLE(FOOTERSPACING 2 LINES)
@STYLE(TOPMARGIN 2 LINES)
@STYLE(BOTTOMMARGIN 2 LINES)    ←┐
@STYLE(LEFTMARGIN 12 CHARS)      │
@STYLE(RIGHTMARGIN 10 CHARS)     │
@PAGEFOOTING(      )             │
@STYLE(PAGELENGTH 4 INCHES)      │
@B(@ADDRESS(                     │
                                 │
                                 │
                    PERFECT WRITER
                       style commands
                                 │
                ← deposit copied address.
                  here, or type it in
))
```

A template can also be set up to address your envelopes

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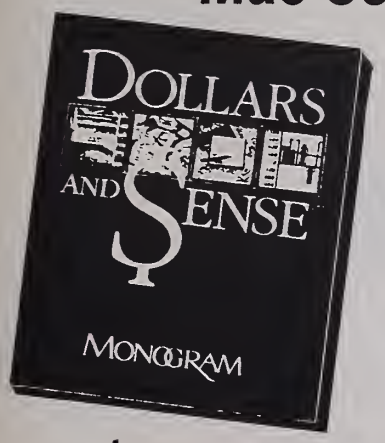

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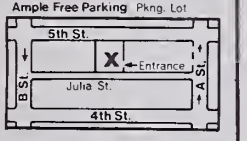

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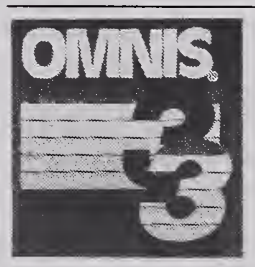

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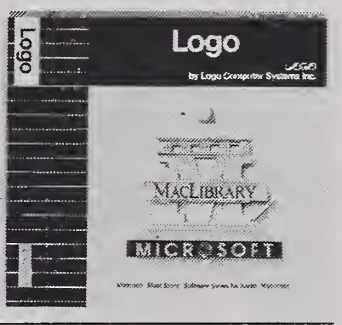

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dBase III And MailMerge

By Bill Amatneek

From time to time you may wish to take a *dBase III* name-and-address file and use it with *WordStar*'s MailMerge to generate a form letter mailing. MailMerge will "merge" a data file with a form letter you have created in *WordStar* by printing the names and addresses from the data file in the places that you designate on the letter. If you take the time to cleverly design the form letter and the data base file, the mailing will appear quite personalized. If you don't, and letters to your esteemed clients end up saying something typically computer-generated like:

Dear J JONES:

Well, Johnny Carson will have that much more material for his monologue.

dBase database files are great for collecting these names and addresses, but .dbf files have a unique form or structure which MailMerge doesn't like. MailMerge insists on dealing with what is called a "Delimited File." Fortunately, Ashton-Tate has provided *dBase III* with a much-improved one-sentence command which will copy or "export" a *dBase III* data base file to a file of your own naming in the delimited format.

First, let's *Create* a *dBase III* file that would flexibly handle most business mailing needs. This example might have more fields, and field width, than you require, so please choose and modify carefully if you use this as the basis for your business-mailing data base. With an A> or C> DOS system prompt, get into *dBase III* with a:

A>DBASE

and, when you receive the dot prompt:

.SET DEFAULT TO b:

(or, for hard-disk users, **.SET DEFAULT TO c:**) and **.CREATE maillist** to look as follows:

B:maillist.dbf **Bytes remaining: 3803**
Fields defined: 12

	field name	type	width	dec
1	FIRST	Char/text	15	
2	LAST	Char/text	25	
3	INIT	Char/text	1	
4	ADRST_AS	Char/text	30	
5	TITLE	Char/text	4	
6	POSITION	Char/text	20	
7	COMPANY	Char/text	25	
8	ADDRESS1	Char/text	25	
9	ADDRESS2	Char/text	20	
10	CITY	Char/text	20	
11	STATE	Char/text	2	
12	ZIP	Char/text	10	
13		Char/text		

When you have carefully filled in this structure down to the 13th field name, hit <**Ctr1 1**>< **End**> to save your work. When you see the message: **"Hit RETURN to confirm — any other key to resume"** hit <**RETURN**> again. To the question: **"Input data records now? (Y/N)"** answer with a **N** for NO.

Let's take a look at what we've done. We reserved 25 character spaces to LAST name because the longest last name in America is 25 letters...I read it in the paper. And 15 character spaces seemed like a fair outside guess for FIRST name.

If you have people on your list who have middle initials longer than one letter — you know the type — well sure, widen the INIT field accordingly.

ADRST_AS means "ADDRESSED AS." In this field we place the *Name*, OR *Title* AND *Name* that we would use with the letter's salutation, that is, the Dear so-and-so: part. With a business letter, you would want to address most associates as "Dear Mrs. Jones:".

Some people, however, insist on being able to say "Dear John:" to some customers. By including an ADRST_AS field, we give ourselves the flexibility of "saluting" a familiar person with a "Dear John:" and a less familiar one with a "Dear Mr. Jones:".

We also included a TITLE field, to hold Mr. Mrs., Miss, and Ms. data. Again, if you've got The Reverend Blind Sweet Willy Tishman on your mailing list, as I do, you should reserve more than 4 character spaces for TITLE. The data in this field will be used in the Addressee section towards the top of the letter, where we will always want to address the person with a title, first name, middle initial and last name.

Also notice in the append screens below that we used upper and lower case letters to enter our character type data. We type them in as we wish them to appear inside a letter. When I receive a letter "saluting" me as:

Dear B AMATNEEK:

personally, I bit bucket it...unless it's from Ed McMahon.

Notice, too, that *two* address fields are included: ADDRESS1 and ADDRESS2. The latter is to allow entry of suite, apartment or office building numbers and names, when applicable. Now please

.APPEND

the following data:

Record No.	**1**
FIRST	**Gregory**
LAST	**Groggins**
INIT	**P**
ADRST_AS	**Greg**
TITLE	**Mr**
POSITION	**CEO**
COMPANY	**Groggins Enterprises**
ADDRESS1	**123 4th St**
ADDRESS2	**apt 3**
CITY	**San Rafael**
STATE	**CA**
ZIP	**94941-1234**

Record No.	**2**
FIRST	**John**
LAST	**Jones**
INIT	**Q**
ADRST_AS	**Mr Jones**
TITLE	**Mr**
POSITION	**Consultant**
COMPANY	
ADDRESS1	**900 Bank St**
ADDRESS2	
CITY	**Lodi**
STATE	**CA**
ZIP	**12345**

Record No.	**3**
FIRST	**Sarah**
LAST	**Smith**
INIT	**W**
ADRST_AS	**Mrs Smith**
TITLE	**Mrs**
POSITION	**President**
COMPANY	**Sarah Smith Enterprises**
ADDRESS1	**987 Broadway**
ADDRESS2	**suite 2**
CITY	**New York City**
STATE	**NY**
ZIP	**10022-4321**

When you arrive at Record No. 4, save your work with

<**Ctr1**><**End**>.

We can now look at the file (for what it's worth), with a:

.LIST

```
Record #
  FIRST          LAST                    INIT ADRST_AS
TITLE POSITION       COMPANY                 ADDRESS1
ADDRESS2       CITY                    STATE    ZIP
1  Gregory     Groggins                  P Greg
 Mr CEO        Groggins Enterprises      123 4th St
apt 3          San Rafael          CA    94941-1234
2  John        Jones                 Q   Mr Jones
 Mr Consultant 900 Bank St
               Lodi                CA    1234
3  Sarah       Smith                     W  Mrs Smith
 Mrs President Sarah Smith Enterprises   987 Broadway
suite 2        New York City       NY    10022-4321
```

We must now copy the .dbf file to a Delimited Format file with a name of our own choosing — let's call it "Merglist." With the database file open, the Magic Sentence to accomplish this is:

.COPY TO merglist DELIMITED WITH"

When dBASE is done, we can look at this file, to which dBASE has tacked the .txt extension, with a:

.TYPE merglist.txt

"Gregory", "Groggins", "P", "Greg", "Mr", "CEO", "Groggins Enterprises", "123 4th St", "apt 3", "San Rafael", "CA", "94941-1234"

Bill Amatneek heads Data Base Associates, a Mill Valley firm consulting in microcomputer programming and training. Bill teaches database management at the University of California, Davis, and San Francisco State University.

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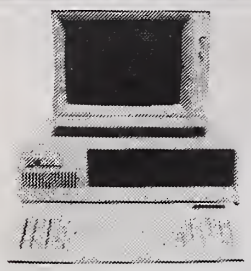

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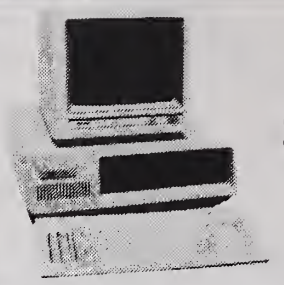

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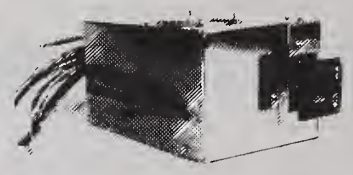

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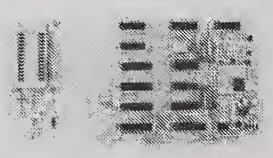

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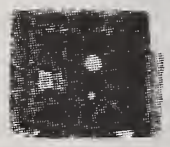

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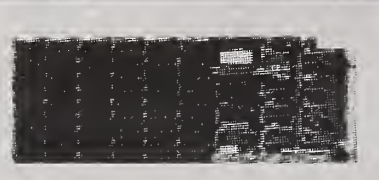

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DATA BASE MANAGEMENT

"John", "Jones", "Q", "Mr Jones", "Mr", "Consultant", "900 Bank St", " ", "Lodi", "CA", "12345"

"Sarah", "Smith", "W", "Mrs Smith", "Mrs", "President", "Sarah Smith Enterprises", "987 Broadway", "suite 2", "New York City", "NY", "10022-4321"

This is the Delimited format: every field is 1) enclosed, or delimited, with double quotes, and 2) separated by commas. Even the missing data for John Jones's Company are represented by a pair of double quotes, separated by commas. MailMerge eats this format for breakfast. Now we should

.QUIT

dBase III, and get into the time-honored *WordStar* with a:

A:WS

and tap L to change the Logged disk drive to b: or c: and

<RETURN>.

A few explanations about the letter below. Besides typing in the body of our letter here, we will also issue some "Dot Commands" to MailMerge. These always begin with a dot or period in the first column, and are followed by the command, which is usually two letters, and then by some data, if any, which the command wishes to see.

In the letter below, the **.DF** command lets us tell MailMerge which Data File to merge with the letter. We are using our delimited file **Merglist.txt.**

The **.RV** lets us state the *field names* that we will use to refer to the separate fields of **Merglist.txt** in our letter, *and* the order of these fields as they occur in the delimited file. Notice that (for the sake of brevity) we didn't use the same field names we used in the .dbf file.

We call up the data from the delimited file to the letter, by enclosing inside 2 ampersands **&_____&** the field name whose data we wish to see in the letter, at the point where we wish those data printed. The /O in the &COMP/O& tells *WordStar* to Omit the printing of a blank line for COMPany if there are no data for it.

The .OP tells *WordStar* to Omit the Printing of a page number for this 1 page letter. The .PA indicates the end of the PAge.

Now let's press **D** to open a new Document file and when prompted with:

"NAME OF FILE TO EDIT?"

enter **LETTER.TXT**

and enter this letter to look as follows:

```
B:LETTER.TXT  PAGE 1  LINE 1  COL 01
                                INSERT ON

L----!----!----!----!----!----!----!----!----!----!----!------R
.OP
.DF b:merglist.txt
.RV FIRST,LAST,INIT,CALLED,TITLE,POS,
COMP,ADDRS1,ADDRS2,CITY,STATE,ZIP


Bob Bogus
Bogus Productions, Inc.
123 4th St
Suite 99
Ashtabula, Ohio

April 1, 1985

&TITLE&  &FIRST&  &INIT&  &LAST&,
&POS&
&COMP/O&
&ADDRS1&  &ADDRS2&
&CITY&,  &STATE&  &ZIP&

Dear &CALLED&:

This letter demonstrates the interaction of
dBase III database files with WordStar's Mail-
Merge facility. I'm sure you'll agree,
&CALLED&, that merging your data files with
form letters works.

Sincerely,

Bob Bogus
President
.PA
```

Now save this letter with a ^**KD** and get into MailMerge from the Opening Menu by tapping an **M.**

When prompted:

"NAME OF FILE TO MAILMERGE?"

type in: **letter.txt**

When prompted to:

"For default press RETURN for each question: DISK FILE OUTPUT (Y/N):"

press **<Esc>**

and catch those form letters as they stream out of the printer. □

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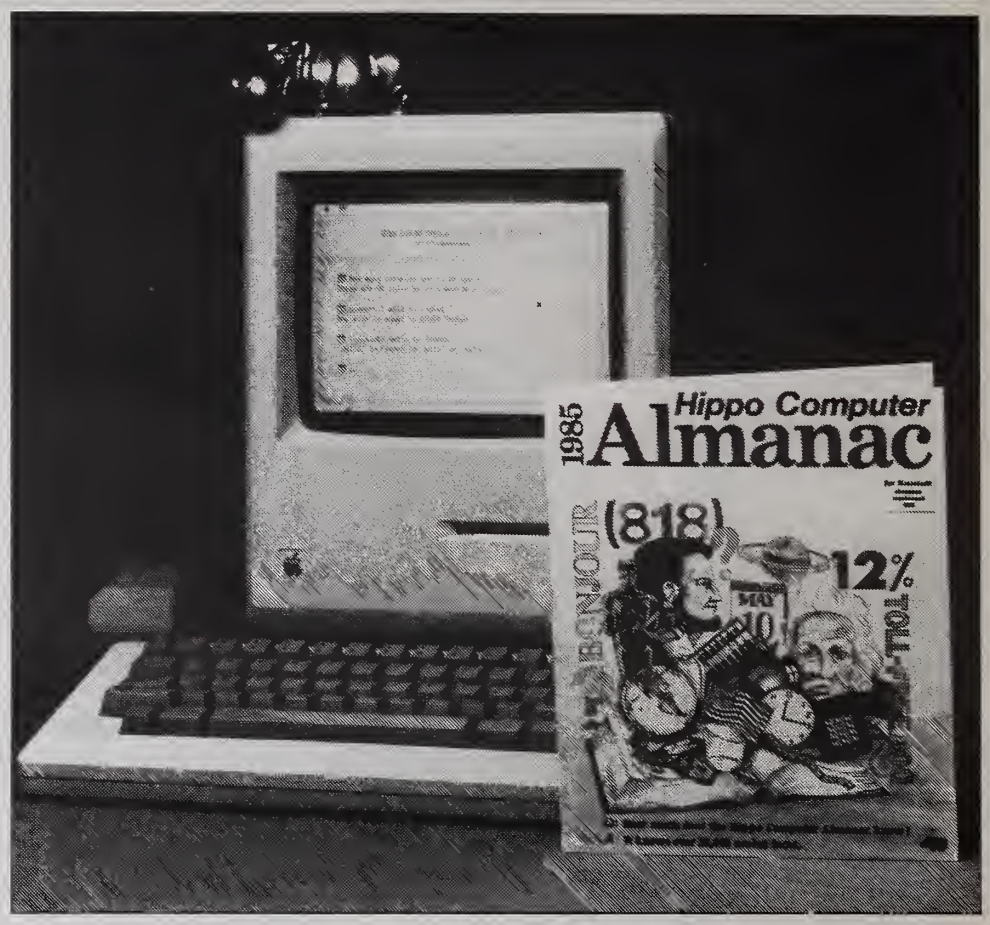
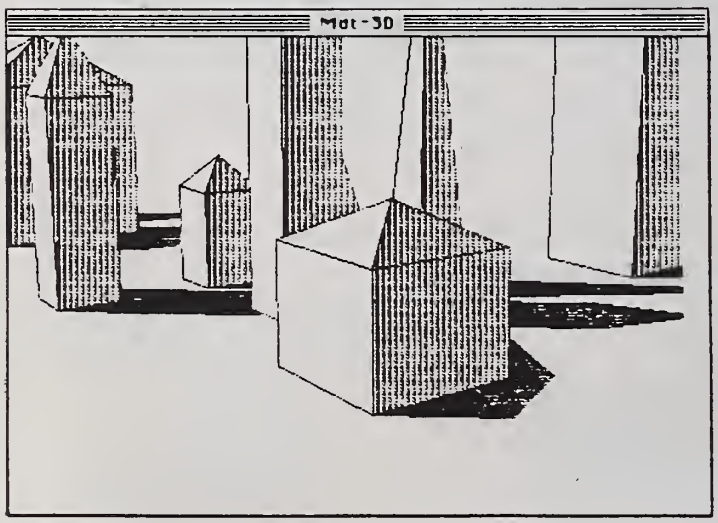


Almanac For The Mac

Hippopotamus Software introduces the *1985 Hippo Computer Almanac*, a collection of over 35,000 useful facts for home, business and educational use. Questions are entered and answered in plain English. There are 17 data categories ranging from historical events to financial formulas. The *Almanac* sells for $34.95 and is currently available for the Macintosh; future editions for other machines are in the works. Hippopotamus Software, 985 University Ave., Suite 12, Los Gatos, CA 95030, (408) 395-3190.



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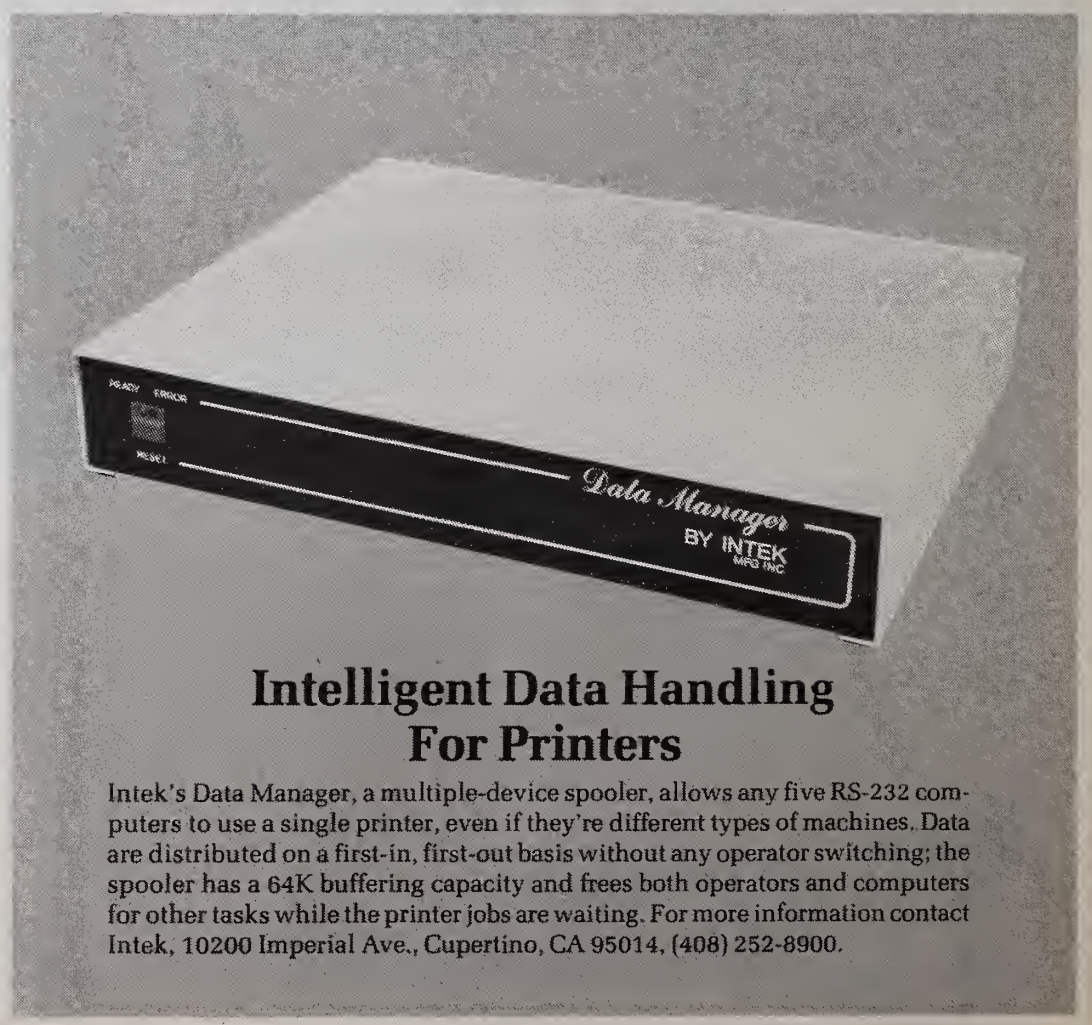

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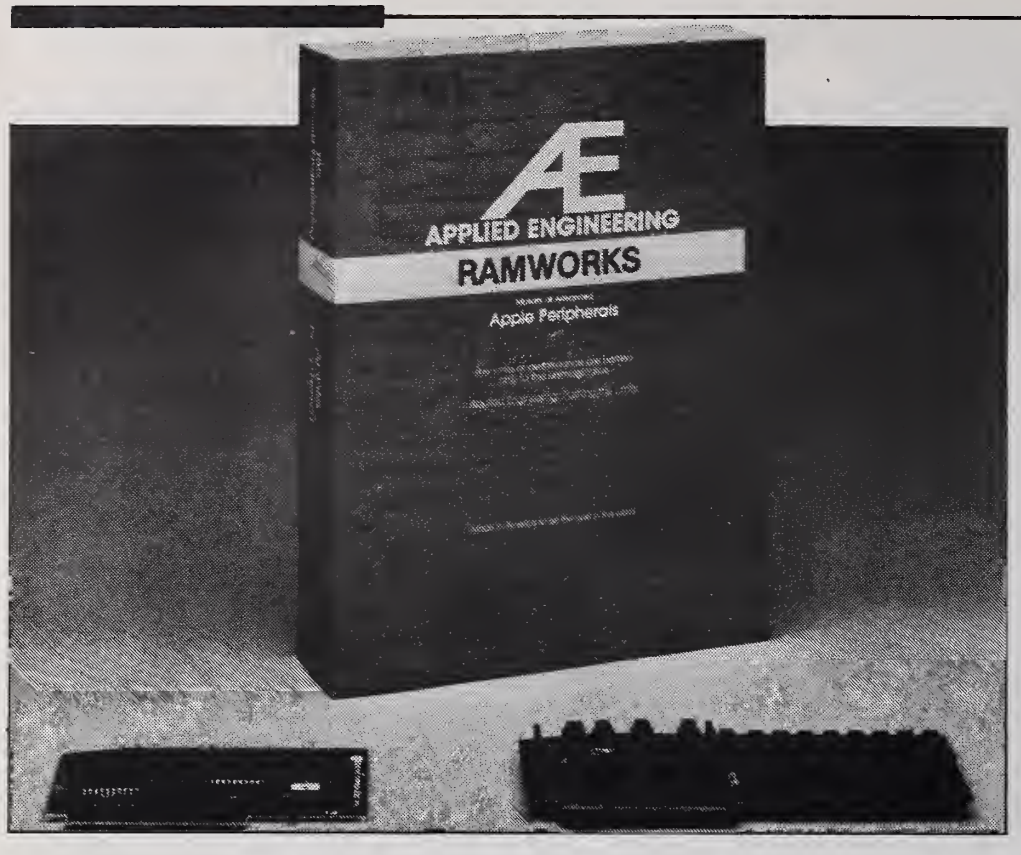
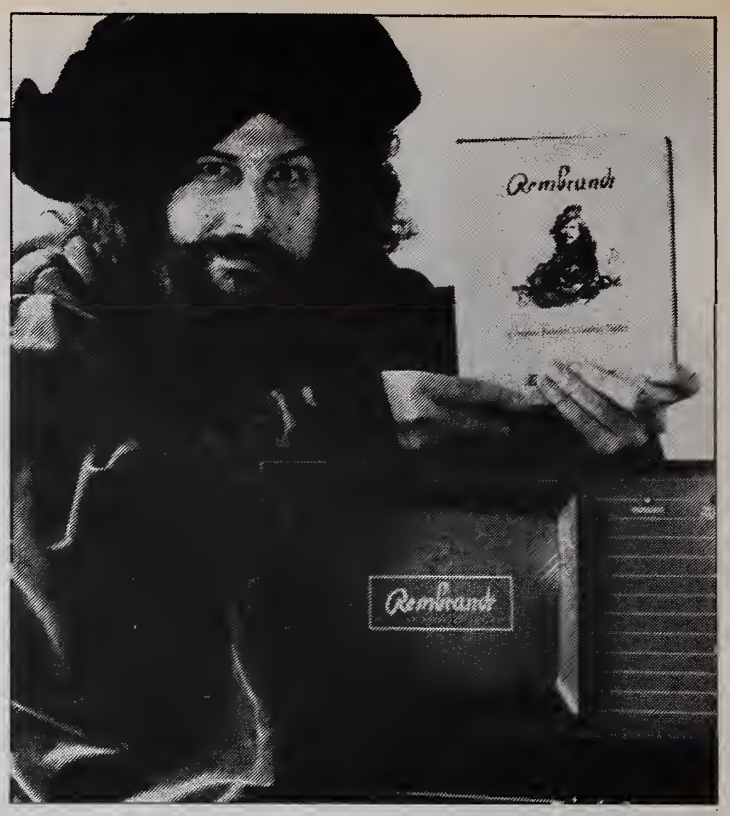


More Memory For Apples

To those who maintain that Apple IIs can't be serious business machines because of their limited memory and, in the case of the IIc, closed architecture, Applied Engineering of Texas says a resounding "Oh yeah?" RAMWORKS is a card which plugs into the slot normally occupied by Apple's 80 col/64K card and gives the IIe 512K of RAM. Z-RAM, a similar card for the IIc, installs easily with no tools more sophisticated than a screwdriver, and also allows the IIc to run CP/M and use such standard business application software as *WordStar* and *dBase*. RAMWORKS sells for $399, Z-RAM for $549, and both are available from Applied Engineering, P.O. Box 798, Carrollton, TX 75006.



Graphics For CP/M

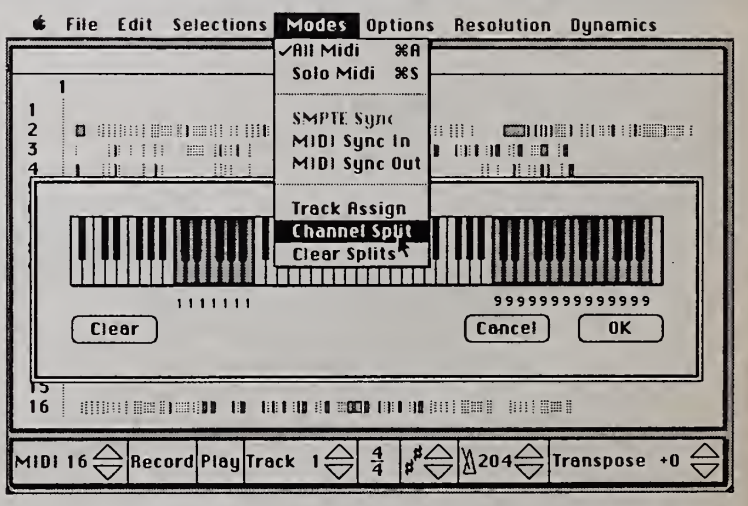
SPECTRE Technologies, an organization of wild and crazy guys from Woodland Hills, insists that CP/M is far from dead and, to prove the point, publishes *Rembrandt*, a complete graphics tool kit for CP/M machines. Information about this program and whatever other nefarious plots are being hatched at SPECTRE is available from Ron Gold, Box 69872, Los Angeles, CA 90069, (213) 399-7938.

Telecommunications For The PC

Around, from Teal Communications, provides easy-to-use personal communications for IBM PC, XT, AT and compatibles. It offers single-keystroke access to major databases, electronic mail, built-in phone book and editing functions, automatic sending and receiving of messages, and unattended operation. *Around* works with Hayes-compatible modems; it requires 192K of RAM, a double-sided disk drive, and DOS versions 2.0 or 2.1. Suggested retail is $190. Teal Communications International, P.O. Box 8062, Blaine, WA 98230, (604) 984-4411.

Real Estate Applications For *Jazz*

RealData Inc., which publishes a series of software for the real estate vertical market, now has the entire program line available for use on the Macintosh using *Jazz*. Titles range from *Real Estate Investment Analysis* to *Residential Real Estate*. RealData, 78 North Main St., South Norwalk, CT 06854, (203) 255-2732.



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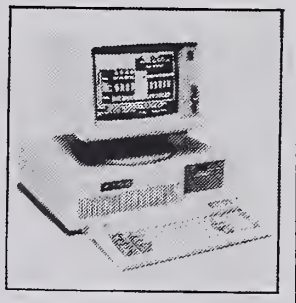

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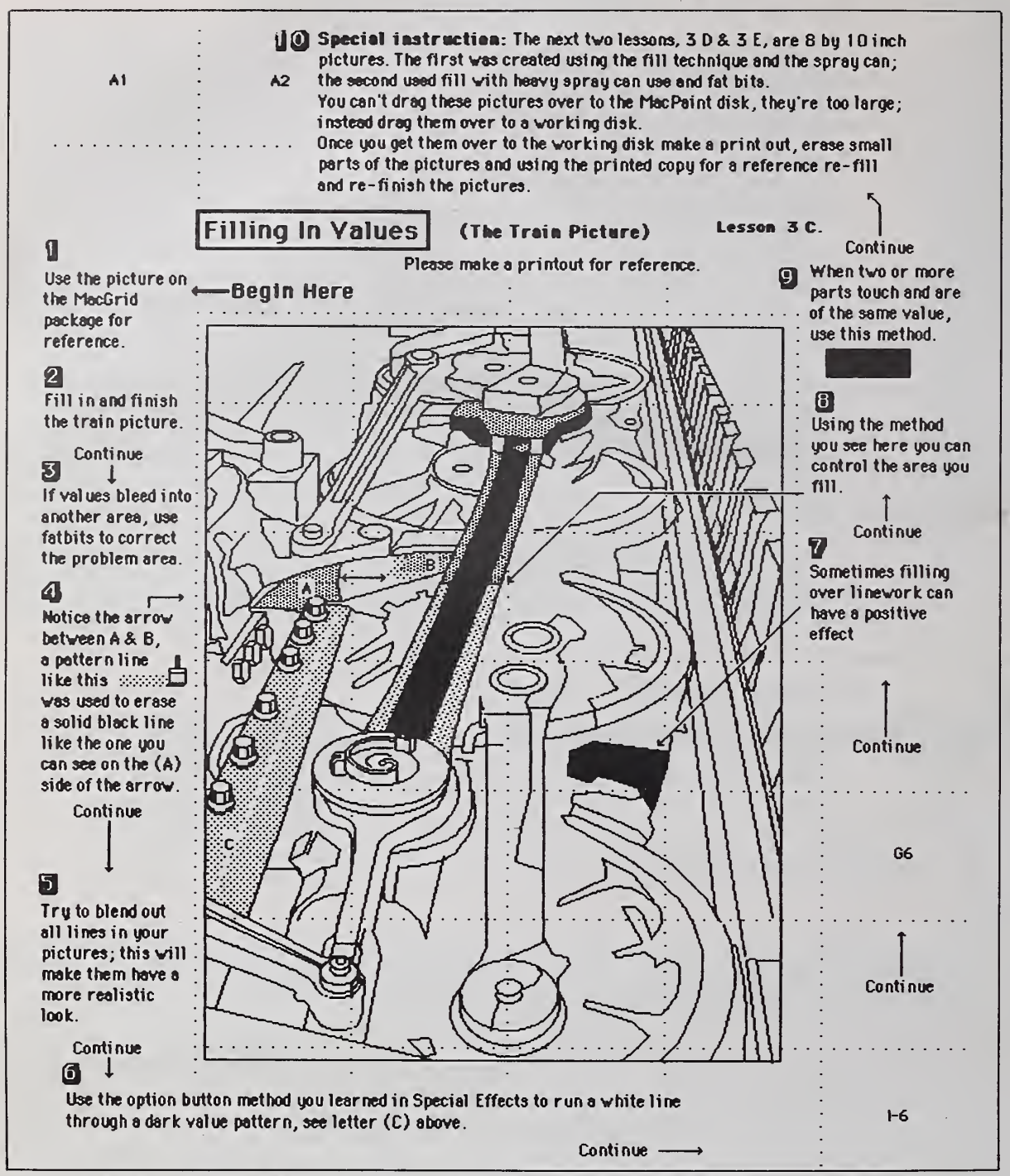
10 Special instruction: The next two lessons, 3 D & 3 E, are 8 by 10 inch pictures. The first was created using the fill technique and the spray can; the second used fill with heavy spray can use and fat bits.
You can't drag these pictures over to the MacPaint disk, they're too large; instead drag them over to a working disk.
Once you get them over to the working disk make a print out, erase small parts of the pictures and using the printed copy for a reference re-fill and re-finish the pictures.
A1
A2
Filling In Values
(The Train Picture)
Lesson 3 C.
Please make a printout for reference.
Begin Here
1 Use the picture on the MacGrid package for reference.
2 Fill in and finish the train picture.
Continue
3 If values bleed into another area, use fatbits to correct the problem area.
4 Notice the arrow between A & B, a pattern line like this was used to erase a solid black line like the one you can see on the (A) side of the arrow.
Continue
5 Try to blend out all lines in your pictures; this will make them have a more realistic look.
Continue
6 Use the option button method you learned in Special Effects to run a white line through a dark value pattern, see letter (C) above.
Continue
9 When two or more parts touch and are of the same value, use this method.
8 Using the method you see here you can control the area you fill.
Continue
7 Sometimes filling over linework can have a positive effect
Continue
Continue
A
B
C
G6
I-6

***MacGrid* offers a grid and helpful tutorials for using *MacPaint* to copy detailed artwork.**

GRAPHICS SOFTWARE

MacGrid

Published by: *Diablo Valley Design*
For: *Macintosh*
Suggested retail: *$39.95*
Reviewed by: *Bill Reefer*

MacGrid is a Macintosh graphics system, produced by Diablo Valley Design, which superimposes a grid onto your *MacPaint* screen. It is a drawing tool designed, ostensibly, to help you control your mouse. *MacGrid* is simple, relatively inexpensive, and can be a great help if you are working with large *MacPaint* documents.

The idea behind *MacGrid* is to provide a tool that can help you transfer drawings from paper into *MacPaint* documents. If you have ever drawn a picture on *MacPaint* that was too large for the active window, you already know what a help such an addition could be. Jumping between screens can create havoc with proportion and shading, and also cause problems in lining up the leg bones and the ankle bones.

What you get with *MacGrid* is a clear plastic screen that measures 8½ × 12 inches. On the screen are 54 rectangular boxes, 9 rows and 6 columns. Each box is identified with a letter and number. You also get a disk with the same grid that can be copied onto your *MacPaint* disk. You can move to any section of the grid using the Show-Page function within *MacPaint*. By drawing on the clear plastic grid, or by placing the plastic over a drawing, you can approach the transposition of a drawing from paper to *MacPaint* — box by box — rather than at screen level.

It is almost *MacPaint*-by-the-numbers, where the numbers refer to position within a particular box on the grid rather than to red, green, or brown. If you require fine detail within one of the grid boxes, an even smaller plastic grid is supplied to provide assistance for detail work.

An informative manual is included that explains how to use this application. 12 tutorials reside on disk. The tutorials provide a good review of the *MacPaint* functions and how they can be used creatively with polygons, special effects, linework, and value scales. The tutorials include several large images with which to work, as well as instructions on how to create ad designs, greeting cards, and duplicate screen grids.

The makers of *MacGrid* proclaim that, "To get quality Mac-Art, the working drawing should be completed on paper, then transferred via the Art Overlay over to the Screen Grid using the mouse."

As a *MacPaint* user, I disagree with the assumption that working drawings must be done on paper and then transferred, by the numbers, onto *MacPaint*. It's just a way to insinuate a product into a process, an object lesson from the "create a need and fill it" school of marketing. Perhaps *MacGrid* should include lead pencils and yellow pads (with grid) instead of the disk!

MacGrid claims to add a "precise controlled approach to drawing with a mouse . . . which allows for more personal artistic control than digitizers, while making possible an incredible level of detail." As far as I know, there is no clinical evidence which suggests that a grid will increase your eye-hand motor control. Furthermore, artistic control and tastes concerning levels of detail reside with the artist. They are not created by *MacGrid*.

Diablo Valley touts the *MacGrid* as a better mouse-trap. It will not control how you move the mouse, but it will help you decide where to move it. You still have to draw the lines. In sum, *MacGrid* can be a helpful tool, particularly in managing problems of proportion, perspective, and scale when creating large images on *MacPaint*. In effect, it is a template for *MacPaint*. And, as such, it would prove more helpful as a desk accessory.

MUSIC SOFTWARE

Concertware+

Published by: *Great Wave Software*
Programmed by: *Chad Mitchell, Robert Gardner, and Boyce Edwards*
For: *Macintosh 128K or 512K*
Suggested retail: *$69.95*
Reviewed by: *Warren Sirota*

One of the first applications that software developers jumped on when the Macintosh was released was music software. The Mac's mouse and high-resolution graphics interface are uniquely suitable for entering and displaying notes. Add to this a built-in, 4-voice synthesizer, and it would appear that the Mac could be a musician's dream. Unfortunately, because of hardware limitations, the synthesizer in the Mac is a modest one at best. It can sound good, but it will never sound like an acoustic instrument or even a commercial synthesizer. On the other hand, a person can create music using the Mac and *Concertware+* simply by entering notes on a score. Years of practice to achieve exquisite levels of brain-instrument coordination are not necessary to produce pleasant-sounding, if limited, music.

Concertware+ is a well-designed, inexpensive way to let you play music with the Mac. It allows you to play tunes with up to 4 notes sounding at once, and it gives you independent control over the tone quality and volume of each of the notes. You have to understand music notation if you want to use *Concertware+*, but you don't have to be any kind of instrumental virtuoso to teach your Mac to play blindingly fast riffs and runs. A little bit of musical taste, judgement, and restraint can be a great aid in controlling these resources to best effect. Personally, though, I like to use *Concertware+* to build bizarre instruments and then invent new and frequently excessive ways of playing them. By hooking a tape recorder up to the Mac's external audio jack and recording these odd experiments, I've started to build up a library of short, fun pieces that I occasionally use to torture children and small animals.

The program has 3 parts: the Music Player, the Music Writer, and the Instrument Maker. You can move among these parts by making a choice in the

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REVIEWS

MUSIC SOFTWARE

Transfer menu, but the process is slow.

The Music Player program is a combination programmable juke-box and electronic orchestration system. When you use it like a juke box, you can have it play several hours' worth of music from the disk in any song sequence that you like. It's cute, but I don't know how many people are going to dedicate their Macs to being Muzak machines for hours on end.

The orchestration part of the Music Player program is useful and flexible. Each tune gets a musical palette of eight instruments, which you choose in the Music Player. Only 4 of the eight instruments can sound at any given time, but you can use the Music Writer to have your music shift freely among the 8 choices at any points in the piece. This choice is like have a multitude of fonts available in *MacWrite* — you can either use the instruments carefully and consistently to produce rich effects and the illusion that your electronic orchestra is quite large, or you can change instruments frequently and at random to produce thoughtless and incoherent music.

The Music Writer is the heart of *Concertware+*, because it's where you create songs. The easiest way to enter notes into the program is to click on a note duration and then click on a whole note in the appropriate position on a staff. The notes are large enough to point to easily, and the whole process is reasonably convenient. It is aided by an unusually quick cut-and-paste process which allows you to duplicate repetitive sections of music without re-entering them manually.

There are two other methods of entering music into the Music Writer which use the Mac keyboard, but neither of them is particularly useful. The program interprets the bottom row of keys as the white keys of a piano, and some of the keys in the second row as the black keys. The letter "C" represents the note C, but you have to use your memory for the rest of the keys. Also, the keys span only about an octave and a half, which is a relatively small range. The "timed entry" option supposedly allows you to play on these keys in time as you would on a piano, and transcribes the notes and note durations. It's an excellent idea, but it always gets the durations wrong. You can have fun with it, though, by playing tunes on the keyboard and seeing how a large number of random timing inaccuracies will transform them.

Concertware+ can handle a surprising range of musical events. It can play slurs and triplets, and text can be added into your score (although it will not synthesize a singing voice). Transposition, instrument changes, dynamics, key changes, meter changes, repeats, and 1st and 2nd endings can all be accommodated. You can change tempos within a piece, but you can't choose tempos precisely enough for my taste. For instance, you can play a piece at 112 beats per minute or at 128 beats per minute, but not at 120 beats per minute. This will matter to musicians. A "draft player" option is included so that you can hear your composition, albeit without the real orchestration, without exiting from the Music Writer to the Music Player.

What the Music Writer *cannot* do is produce a legible, playable musical score. It can't handle the notational niceties of beaming and the scoring subtleties of note grouping and placement. To be fair, no program in this price range handles these issues; nonetheless, you shouldn't purchase this program if your aim is producing scores for musicians to play from.

My favorite part of *Concertware+* is the Instru-

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MUSIC SOFTWARE

ment Maker. This allows you to design and test your own instruments, and you can really make some strange and complex ones. You have to understand a little bit about the structure of sound in order to use this effectively, but this is no more than is expected of any synthesizer player. *Concertware+* comes with more than 40 pre-designed instruments, so you don't have to get into this part of the program in order to play tunes, but you'd be missing a treat.

The perception of tone quality in sound, or what makes one instrument distinguishable from another instrument, is a complex phenomenon, but there are several elements of sound which are recognized as playing an important role. One of these is called *harmonic content*. When you play a note on an acoustic instrument, what you really hear is a complex tone resulting from a mixture of various "overtones" or "harmonics." For instance, a "C" played on a piano will contain hints of a "C" an octave above it and also the "G" above that and on and on up to the limits of human hearing. This was all established by the German physicist Helmholz in his 1862 book, *On The Sensations Of Tone*. The Instrument Maker allows you to set the relative volumes of all the harmonics for the notes that you play with a few clicks of the mouse.

Another important characteristic of an instrument is its *amplitude*, or *loudness envelope*. This refers to how quickly the loudness of a note evolves during the life of the note. A note plucked on a guitar might have an initial, almost instantaneous, burst of loudness (corresponding to the click of the pick), then stabilize at a moderate volume level for a short time, and then die off rapidly when the finger is removed from the string. This would be in contrast to a bowed violin playing a swelling note, where the volume might slowly increase to a peak level, and then just as slowly die off. *Concertware+* gives you excellent control over amplitude envelopes, allowing you to draw extremely complex ones. You can even modify them at a micro level with a FatBits-style interface.

Small, rapid variations in pitch, such as you hear in the voices of operatic sopranos, are called *vibrato*. Vibrato is an important expressive tool in music, and the Instrument Maker gives you all the control that you would need over it.

At all points in the Instrument Maker, you can hear the instrument that you are designing by clicking on the piano-like keyboard at the bottom of the screen. If sounds are your fascination, as they are mine, you will spend many hours trying to create really odd sounds. When you're done, you can save and name the sound, and even design an instrument icon to represent the sound in the Music Player.

Take this all with a grain of salt, however. Because the sound-producing hardware in the Mac is not high-fidelity in any sense of the word, what you see is not what you hear. You can specify any combination of harmonics that you like above a frequency of 10kHz or so, and you're not going to hear it accurately because the Mac can't do it. There are various enhancements to the Instrument Maker that I could suggest, but they would only make sense if they were driving hi-fi hardware. The only enhancement that I would seriously suggest is that some way of making decent percussive sounds be provided.

All in all, *Concertware+* is an easy and fun way to make some neat sounds with your Macintosh, and to learn a little bit about sound design. Play away.

GAME SOFTWARE

With *MacChallenger*, you too can fly the space shuttle — on a Macintosh.

MacChallenger

Published by: *Aegis Development Inc.*
Written by: *William Volk*
For: *Macintosh*
Reviewed by: *Ken Goehner*

The cloud cover goes on for as far as the eye can see. The only way down is by groundscan radar, instrument guidance and a little luck. This is your only chance; the spacecraft is now only a glider that the engineers have dubbed "the flying brick" with good reason. Any serious misstep could mean trading in your hero's welcome for an opportunity to redecorate the neighborhood with yourself. The descent continues. There is no turning back. The VOR is showing the landing strip to the northeast and the glide ratio is too steep—lift the nose a little and correct the heading ... That's it. The runway is coming into view through the mists. Lower the flaps, the landing gear, keep the nose up ... Touchdown! Congratulations, space ace, you've won your wings.

This is *MacChallenger*, the first in a series of simulators by Aegis Development, the creators of the highly acclaimed *Pyramid Of Peril* 3-D adventure game. *MacChallenger* is a highly sophisticated and highly accurate reproduction of what it's like to take the shuttle out of orbit and land it at either Edwards Air Force base or the Kennedy Space Center (there is also a non-functioning selection for the Los Angeles International Airport. This may represent wishful thinking on the part of Aegis, or just maybe they know something we don't). *MacChallenger* was compiled from extensive studies of the NASA flight and space programs as well as comprehensive assessments of the shuttle itself and its flight characteristics. According to a number of pilots with large aircraft experience, this is the "most realistic flight simulator to date available on a microcomputer."

The screens are deceptively simple; the Hello screen is a beautifully rendered picture of the shuttle landing, the next screen is a graphic portrayal of the earth as seen from on high. When you opt to deorbit and start the adventure, things change dramatically. You are now inside the shuttle—the lower third of the screen is occupied by the control panel, a simplified version of the actual control panel on the Challenger. Most of the panel is dedicated to monitoring gauges — Attitude Direction Indicator, Horizontal Situation Indicator, Event Timer, Alpha Mach Meter, Altitude/Vertical Velocity Indicator, etcetera. You control five toggle switches — landing gear up/down, flaps, speed brake, auto pilot, and a "joystick" (a mouse controlled joystick graphic) that controls the nose up/down and left/right banking maneuvers of your brave craft.

Above the control panel, filling the rest of the screen, is a "video monitor" which will show either a radar scan of what is directly below you, your relative location being marked by a crosshair, or a view of the land and sky before you. There are advantages and disadvantages to both visuals; the radar can "see" through cloud cover and help you locate the runway fairly easily. The view screen is good for giving that real "seat of the pants" feel to the simulator and is useful in adjusting the altitude of the shuttle on the final approach. You can switch between either screen at any time during the game. While the graphics have been stylized to speed up the animation process, they are representative of what one might see if one took a flight over the California Desert or the southern tip of Florida. It is heartily recommended that you get used to the program and take the autopilot for a spin before trying any stunt flying; not only will you crash, but if you're too close to the screen you may find your stomach doing loop-the-loops as well.

As mentioned before, your basic mission this time out is just to return the shuttle back to earth in one piece. This is not the tame undertaking it may sound like, but if you find that too easy there are other options that can be invoked; weather conditions can be altered to introduce a new degree of difficulty — from calm to breezy to windy, for instance, and cloud cover which works with any selected wind condition and forces you to navigate by instruments alone until you're below the cloud level, in which case you'd better be able to land soon.

Even if you crash, there is still more to *MacChallenger*. Once you have finished your mission, you can watch yourself hurtle through the heavens from any and all of ten different "camera" locations i.e., above, side, and ground sites both near and far. This is where *MacChallenger* really stops being "just another simulation toy" and becomes a real learning experience. You can actually see the effects of wind conditions on the craft, how ticklish the controls are, and how the flaps and speed brakes affect the flight characteristics of the shuttle. The flight can be played back as many times as you like from any angle and can be shown in reverse, slow motion and at fast forward — the mouse-actuated controls are very similar to the buttons on a VCR.

This is just the beginning of Aegis' plan to bring the space program closer to home. If you examine the Menu Bar you will notice that there are a number of Help screens that pertain to specific shuttle functions that have no bearing on the simulator whatsoever. The same is true of the manual. This is not a mistake; in addition to supplying a fantastic flight simulator for the Challenger and some hard-core information on its equipment and operations, Aegis is laying the groundwork for more advanced orbital missions (satellite launchings, recoveries, EVA's, etc.). These will be avail-

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GAME SOFTWARE

able soon free to purchasers of *MacChallenger* who have sent in their registration cards and who own 512K Macs (the *MacChallenger* was originally written for 128K Macs. Since the majority base of Mac users has gone to 512K, there are a lot of very happy programmers out there just dying to show their stuff in expanded RAM. William Volk is no exception.). 128K Mac users who register will be sent updated manuals and product as they become available.

If you have ever dreamed of flying through the starry skies or bravely going where no (hu)man has gone before, climb aboard *MacChallenger* and set your intuition and navigational skills free. This program provides the best home training ground for potential and professional skyjockeys anywhere, and is only the beginning of a series of programs. Live long and prosper. (Aegis Development, Incorporated, 2210 Wilshire Blvd., Suite 277, Santa Monica, CA 90403, (213) 306-0735.)

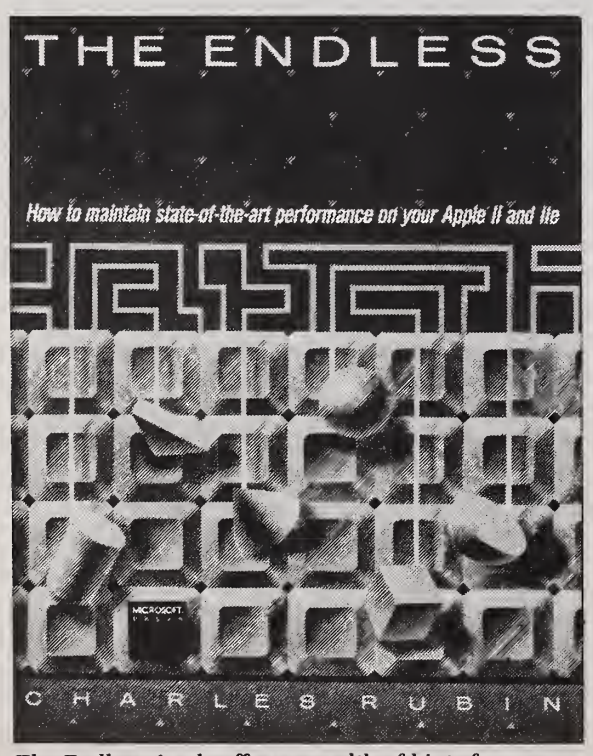
BOOKS

The Endless Apple:

How To Maintain State-Of-The-Art Performance On Your Apple II & IIe

By: *Charles Rubin*
Published by: *Microsoft Press (1984)*
List price: *$15.95*
Reviewed by: *Mike Markowitz*

Charles Rubin, a contributing editor to *Personal Computing* magazine, has written a paradoxical book. It is a wonderful introduction to the range of Apple peripherals and software available as of mid-1984. Anyone with an elderly Apple II or II+ will find a wealth of ideas here for upgrading the machine. On the other hand, anyone with an old Apple is probably a fanatical enthusiast, who reads half a dozen computer magazines religiously and already knows this stuff along with this week's latest developments. For the beginner, who has picked up a bargain II+ or the owner who has been in hibernation for the last three years, *Endless Apple*'s $15.95 price tag could be a worthwhile investment.



***The Endless Apple* offers a wealth of hints for upgrading your Apple II with various software and peripheral options.**

The book is beautifully produced, with wide ings by Rick van Genderen. Chapters on software cover Word Processing, Spreadsheets, Data Base Management, and Integrated Applications. The hardware chapters cover Modems, Graphics, game controllers, and a superb discussion of "Portability and Convenience." The book closes with a rave review of the IIc and some forecasts. ("No one can say positively that there will never be a Z-80 card for the IIc . . ." Rubin predicts, and sure enough, the product is already on the market.)

The tone of the book is reasonably non-technical, but well-informed. A number of "case studies" of particular users and their problems lend a human touch. The author is enthusiastic about Apple and its products, and the "cheerleader" approach may offend some readers (especially Franklin owners!).

While a bit pricey for the average individual, *The Endless Apple* would be an excellent acquisition for any Apple user group library.

Apple Software For Pennies

By: *Bertram Gader and Manuel Nodar*
Published by: *Warner Books (1985)*
Price: *$9.95 C Soft*
Reviewed by: *Mike Markowitz*

Since we were always taught that "you get what you pay for," it is easy to be skeptical, even cynical, about free software. Here is a new book that lists over 2000 public domain programs for the Apple II family of personal computers. The authors have an earlier book to their credit: *Free Software For The IBM PC.*

The book includes a directory of Apple user groups across the country and around the world (would you believe Tasmania!?). There is also a short, useful glossary of technical terms at the back. The main body of the book, however, is a topical catalog of the public domain software holdings of eleven big user groups. Each program is coded according to the club that offers it, and the particular disk it resides on. Complete ordering information is provided. Typically, a disk goes for $5.00 plus shipping costs and contains many programs on both sides. Some clubs require that you join and pay a membership fee to order software, others do not. The list covers a wide geographical range in the U.S. and Canada.

The catalog is divided into chapters on Games, Demonstrations and Art, Music and Sound, Utilities, Education, Business and Home, and Communications. Each item has a brief description along with the coded ordering information.

The potential user of free software should consider a few cautions: "As can be expected, much of the public domain software is not up to par in quality. Many disks do not provide descriptions of what each program does. Most come without adequate instructions on how to use the programs," the book warns.

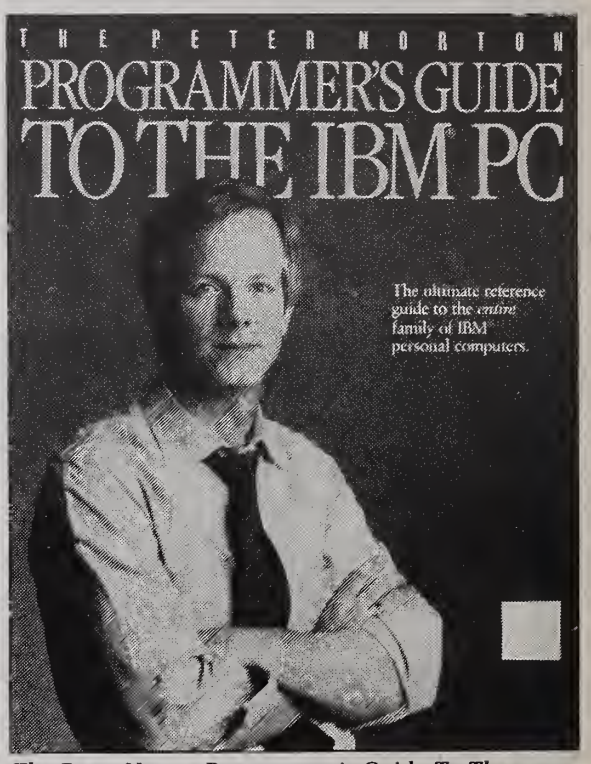
Software that just doesn't work, requires a special language, or is obviously out of date has been dropped from the book. Some items have extensive "Help" features of self-contained documentation, but this is still a rarity. Undocumented software can be one of life's great frustrations.

Another risk lies in entrusting any fragile magnetic media to the tender mercies of the postal system. When that helpless slab of vinyl has been sitting in your 120°F mailbox all afternoon, you should not be surprised to get I/O errors, or find that it has more bad sectors than the South Bronx.

On the other hand, one of the great advantages of free software is that it is not copy-protected. There is no problem in backing it up, or sharing it with friends. For $5.00 and a little time and effort, you can get a word processor, graphics package or communications program that is every bit as good as a commercial product costing $60.00 or more. Free games, of course, will not be up to the state of the art in design, but they can still be fun.

I have received some public domain software that is superbly designed and implemented, some that doesn't run at all, and some that I've given up on trying to figure out.

The authors point out that a typical user will spend as much on software as his or her total investment in hardware. Over the past few years, dedicated hobbyists have devoted millions of man-hours to creating an amazing variety of programs for the Apple. One of these may be just the perfect solution to save you time and money. Although they are likely to become outdated rapidly, books like *Apple Software For Pennies* perform a valuable service for all users, but especially the beginner who is short on funds, and still recovering from the down payment on that IIe.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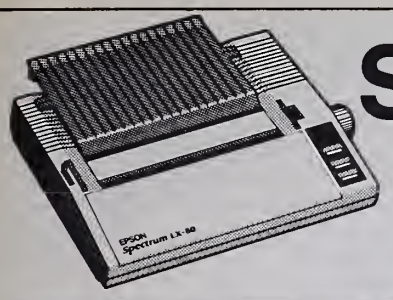
The Peter Norton Programmer's Guide To The IBM PC

By: *Peter Norton*
Published by: *Microsoft Press (Bellevue, 1985)*
Suggested retail: *$19.95*
Reviewed by: *Bennett Falk*

The Peter Norton Programmer's Guide To The IBM PC is really too good for its title. To be sure, programmers will benefit from it, but if you pass it over just because you think it's only for programmers, you're doing a disservice to yourself and to the book. It may not be a book for everyone, but there is a much wider audience for it than the title suggests.

The *Programmer's Guide* offers nicely crafted detailed descriptions of the IBM family of personal computers and of the low level software that de-



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BOOKS

fines the basic facilities of those machines. It could easily be used as an encyclopedia of just about everything anyone would care to know concerning:
1) the hardware of the IBM PC, PC-XT, PCjr, and PC-AT;
2) the features of the ROM-BIOS in these various machines; and
3) the higher level routines of DOS from version 1.0 to 3.0.
There are pieces of sample code illustrating the use of the various features discussed, but the emphasis is always on the capacities of the hardware, DOS, and BIOS, and not on assembly language programming technique.

Finally, there are chapters on "Program Building" and "Programming Languages" which develop Norton's strategy of using assembly language programming sparingly to supplement the features of the higher level languages.

Whether you consider yourself a programmer or not, there are good reasons to know the things this book intends to teach. The *Programmer's Guide* contains good discussions of PC hardware, hardware options, and terminology; it offers a relatively painless way to become a well-informed consumer.

Apart from consumer matters, the *Programmer's Guide* does an excellent job of engaging the reader in theoretical issues: Why does software behave the way it does on the PC family of computers? How fully are the computer's resources being used by the operating system? What other features could the operating system offer? What are the tradeoffs in software design for these machines? If you have ever stared at the box on your desk and wondered, "What is really going on in there?" the *Programmer's Guide* is for you.

The PC-SIG Library

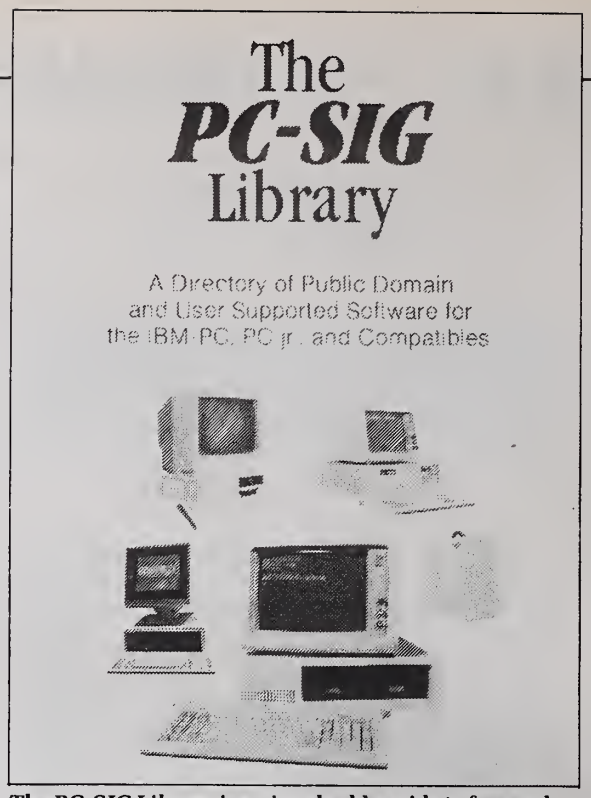
For: *IBM-PC, PCjr, and compatibles*
Suggested retail: *$8.95*
Reviewed by: *Bennett Falk*

"Free" software is an idea that floats like a mirage in front of most of us who use computers. Chances are the free software that will come your way will do so by accident as a gift from a friend, and it may be what you need or it may not.

Things don't have to be so haphazard, of course. You could buy a modem (and an asynchronous communications card and communications software) and shop for the free software available on local Bulletin Boards, but if you aren't a modem enthusiast, that's a steep price to pay for free software. The BBS world, however interesting, is fraught with perils of its own: you may have to hunt through several BBS's to find the software you want, and even then you must trust the good will of whoever uploaded the software and the watchfulness of the sysop to insure the quality of what you download.

The PC-SIG Library is a valuable tool that promises to bring the world of public domain and "user-supported" software for the IBM PC and similar computers within reach. This book catalogues the more than three hundred diskettes available from the PC Software Interest Group's Library. Copies of the diskettes may be purchased at $6.00 per diskette from PC-SIG.

The library itself is a wonderfully diverse thing. How could any library that has a diskette named "Pizza & Check Register Systems" fail to have something for everyone? It contains word processors, spreadsheets, utilities, games, communications programs, and more. There are listings for back issues of "disk magazines" and newsletters, as well as templates and code for commercially available applications like *Visicalc, 1-2-3,* or *dBase II.*



The PC-SIG Library **is an invaluable guide to free and low-cost software available for IBM and compatibles.**

The bulk of the book is taken up with listings of the contents of diskettes in the library. Each diskette has a reference number, and its contents are listed by file name with a one-line description of the file's contents. Other sections of the book introduce you to the basics (copying diskettes, interpreting file names, etc.), describe some of the programs at greater length, and index the library by diskette name, by file name, and by subject. Miscellaneous information includes a glossary of terms and information on both ordering diskettes from and submitting diskettes to the library.

In general the book is more than serviceable. Don't expect the "program descriptions" section to provide critical reviews of the library's contents. Most of the material in this section seems to have been provided by the makers or distributors of the various software packages. The descriptions are uneven, but useful nonetheless. It would be helpful if the listing of the library's contents included file sizes, but this is a minor inconvenience.

Much of the software listed in this book is "user supported": distributed for free with no copy protection. A contribution of some amount may be suggested for those who find the software useful. In some cases becoming a registered user of such software may entitle you to additional documentation or to upgrades to the software.

SELF-HELP SOFTWARE

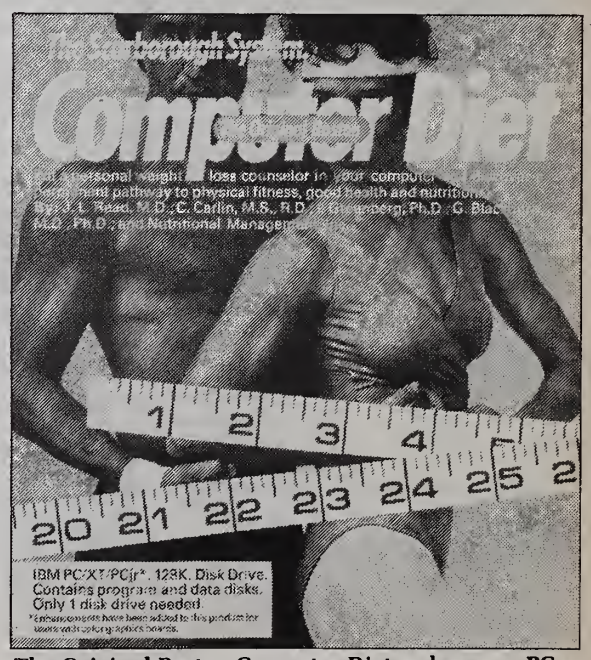
The Original Boston Computer Diet

Published by: *Scarborough Systems, Inc.*
For: *IBM PC, XT, PCjr, or compatible with 128K*
Reviewed by: *Doug Pencille*

At first glance, the *Computer Diet* looks like a fad program with a fad diet to be used once and tossed aside with the other programs that don't live up to the packaging hype. However the *Computer Diet* is not a fad at all; in fact, its authors are three doctors, a nutritionist, and Nutritional Management, Inc., a group of clinics for the treatment of severe obesity. The specialized occupations of the authors range from instructor at Harvard Medical School to behavior modification psychiatry. The credentials of each add to the depth of the *Computer Diet* and the wide range of eating disorders which are covered in the reading material provided with the software.

Computer Diet works, not because the program has you spend good eating time sitting in front of the computer, but rather by making dieters aware of what they are consuming at each sitting. The software is made up of questionnaires and input by the user as to the amount of food, by groups, which is consumed each day, and selected reading material tailored to the user's own weight problem. All of the input is stored automatically into a rather sophisticated data base. The computer becomes the user's own weight-loss counselor and gives instructions and sometimes cruel comments to dieters, based upon their performance.

The software was written with four basic principles to help you lose weight. First, weight problems are based on habits, and they can be changed. Second, the changing of habits requires work, not just will-power. Third, body weight is a function of energy consumed and energy expended, and fourth, diets should not only reduce weight, but provide for a long-term maintenance of the desired body weight. The last objective, keeping the weight off, always seems to be the hardest. The *Computer Diet* will make you realize that the amount and kind of your food intake is related to the time of day, mood of the eater, and the environment you eat in. By the end of the diet period, the user has gone from computer assigned meal planning to his own food group selections and conscious eating patterns. As with any diet, there is a certain amount of exercise required to burn off those calories, and the data base will help select the amount and type to fit the individual.



The Original Boston Computer Diet **makes your PC a personalized nutrition and weight-loss counselor.**

What impressed me the most about the *Computer Diet* was the constant attention to overall health and not "overdoing it." User satisfaction comes slowly at first, but the attention span is held by graphs available showing your progress.

The software is simple to understand and use. The error handling is good, with help screens and a tutorials available. Each session in front of the computer takes only a few minutes to report your food intake for the day, and the reading material is very educational. In addition to the food groups and related calorie content contained in the data base, users may put up to 300 additional items onto the disk, should their selection of foods be something out of the ordinary.

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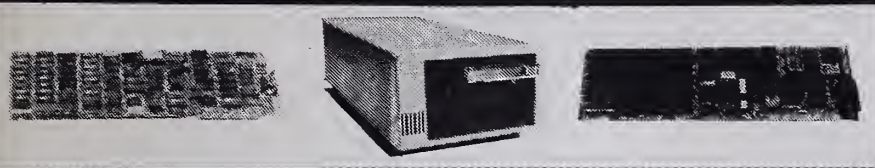

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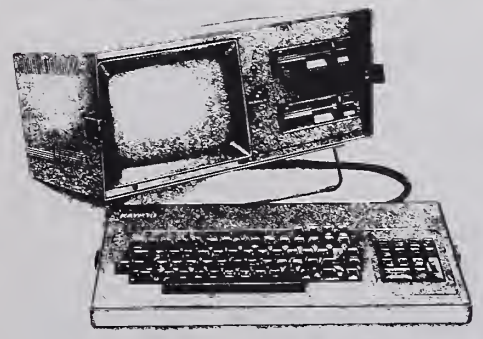

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USER GROUP NOTES By Mary Eisenhart

Well, there are those who say that **CP/M** is dead, but you'd never know it by looking at the folks from **BAKUP (Bay Area Kaypro Users and Programmers).** We visited the group's June meeting and found an avid group of enthusiasts using their machines for a variety of applications and offering helpful advice to those who needed it. Our thanks to the group for their hospitality. If you're a Kaypro user looking for others of your kind, BAKUP meets on the third Tuesday of the month at 7 pm in the Albany Senior Center, 846 Masonic Ave. in Albany.

Also on the CP/M front, **George Morrow** regaled the June meeting of **East Bay FOG (First Osborne Group)** with outspoken defense of the operating system, citing a televised test in which the CP/M Kaypro handily beat an Apple IIe, an IBM AT and PC, and a Macintosh in the speed with which it performed a simple counting program. Morrow also contested the notion that computers are ever going to be user-friendly, maintaining that "user-friendly computer" is a contradiction in terms.

Meanwhile, **Morrow**'s own computer has a thriving enclave of supporters in the East Bay. **Claire Rudderow** of Lafayette reports that the **Diablo Valley Morrow User Group** is in the process of electing new officers and moving to new quarters. For the time being, the old address and phone number will probably still work: Diablo Valley Morrow User Group, 2255 Contra Costa Blvd., Suite 100, Pleasant Hill, CA 94523, (415) 676-9000.

Tim Negris reports a change of address for the **First Mindset Users Group.** Enthusiasts of the Mindset machine, which combines IBM compatibility with mind-boggling graphics and animation capabilities, should contact Tim at 138 Village Court, #6, Walnut Creek, CA 94596, or call him at (415) 934-1448. Meetings are held on the third Monday of the month at 7 pm, and locations vary. Tim is sharing leadership of the group with **David Duberman,** who has moved to San Jose and is thinking of starting a South Bay chapter.

Shep Tamler of **EBMUG (the East Bay Macintosh User Group)** calls in with the information that the group has changed its meeting location. Meetings are now held at the West Berkeley Public Library, 1125 University Ave., Berkeley. Time (7:30 pm) and date (third Tuesdays) remain the same. Contact Shep at 5901 Broadway, #7, Oakland, CA 94618, or call (415) 653-5849 for further info.

In Southern California, the **South Bay Apple III User Group** has also moved its meetings. Meetings are still on the IIIrd Tuesday of the month at 7:30 pm, but they're now held at the UCLA Harbor General Hospital, Room 111. Call (213) 316-7738 for information.

The ever-active **FORTH Interest Group** has a couple of items of note. First, if you want to combine your FORTH activities with a European vacation, the FORTH Modification Library conference will be held October 25 – 27 at the Stettenfels Castle near Frankfurt, Germany. FORML is a forum for pooling resources and discussing proposals for FORTH language enhancement. On a more prosaic scale, FIG is now is now offering the "Forth-83 Handy Reference Card," a programming aid listing the Forth-83 standard commands, free of charge to members. FIG can be reached at (408) 277-0668, or at P.O. Box 8231, San Jose, CA 95155.

Lion Goodman reports that a profitable discussion of *ENABLE*'s enhanced 1.1 version took place at the first **ENABLE Users' Group** meeting June 4. All purchasers of version 1.0 who mailed in their registration cards will be receiving 1.1 in the mail free of charge. The next meeting will be held Monday, July 22, at 7:30 pm in the Fort Mason Conference Center, Building E, Room 287, in San Francisco. Contact Lion at (415) 381-3300 for information.

Last but not least, **William Gitow** of San Jose thinks we should add a new category of listings for **Local Area Networks.** He starts the ball rolling with his own LAN: **California PC LAN Users Group,** 1625 The Alameda, Suite 511, San Jose, CA 95126, (408) 289-1711. So if we get some response from you LANs out there, we'll add the category next month. Let us hear from you.

Whatever your group is up to, let us know and we'll gladly publicize it. Send your listings and announcements (preferably *at least* a month before the event) to MicroTimes User Group Network, 5951 Canning St., Oakland, CA 94609.

BULLETIN BOARD

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Kayfog RBBS & RCP/M (Fog System 11) (415) 285-2687; Free; special help for newcomers, Kaypro, Morrow, Osborne, and CP/M.

Napa Valley RBBS/RCP/M (707) 257-6502. Interests in Atari, Apple, Osborne, dBase II.

Bay Area Atari Users Group 24 hour BBS (408) 578-2390.

NCR BBS of Northern California Bulletin Board System for all users of NCR Microcomputers (Decision Mate V and PC-4). Learn more about NCR's microcomputers.

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The Bay PBBS 300/1200 Baud full duplex. 24 hrs., 20 megs online. Apple super-32 computer section, excellent Macintosh/Apple II downloads. (415) 775-2384. Easiest to get through in the mornings.

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BAKUP (Bay Area Kaypro Users and Programmers) (415) 223-2237 RBBS & RCP/M — Must be a member of BAKUP, P.O. Box 20181, Oakland, CA 94620.

NCR BBS of Northern California (408) 744-0556. Bulletin board for all users of NCR microcomputers (PC-4 and Decision Mate V). Learn more about NCR's microcomputers. Contact Lee Sherman or Jim Chandler, 756 San Aleso Ave., Sunnyvale, CA. (408) 743-4933.

SIMMS (Silicon Valley Interchange) 4000 files on line. New releases, communications, and utilities for CP/M based computers are available on a nonprofit public-domain, 24 hour remote CP/M system. The SIMMS (Silicon Multiple Message System) Network Headquarters runs on a CompuPro 816 with 40 megabyte hard-disk drive. The Modem number is (408) 732-9190. To register, send a six-digit password and $25 to SIMMS Headquarters, Silicon Valley Interchange RCP/M Registration, Box 532, Cupertino, CA 95015. Sysop: Ed Svoboda Jr.

Bulletin Board Hewlett-Packard BBS. Features HP-current events and user information. 24 hrs., 300-1200 baud, 7 bits, odd parity, 1 stop. NO FEE. (408) 747-1243.

MBL Referral System BBS A board dedicated to personal messages and advertising listings. Modem: (415) 444-6362; 6 pm - 6 am weekdays, 24 hours weekends. MBLRS BBS users meeting Saturdays, 5:30 pm, 1555 Lakeside Drive, Suite 23, Oakland. Call (415) 444-3033 for info, ask for Mei.

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Vortex BBS. (916) 481-0194. 24 hours, 300 baud. Pamela Lunsford, sysop.

Welch Net II. A public FIDO BBS. Message areas devoted to Turbo Pascal programming and Seequa Chameleon computers. Available 23 hours/day. (415) 391-9148.

The General Store Public Domain Programs. Computer industry and computer product information. Hundreds of diverse public domain programs including science, music, education, games, financial, and business programs for the Apple computer. Easy to use. 300 baud, 9 am - 12 pm, (415) 851-4497.

Fantasy Factory BBS. Fantasy Factory of Pacifica. IBM and compatibles oriented, but all welcome. 300/1200 baud, 8 bit, no parity, no fees. (415) 355-6047. Sysop Ev Cheney.

Pro Bono BBS (TM) is a public interest board with file areas devoted to legal self-help and education, landlord/tenant relations, financial and tax issues. Modem line is (408) 372-8737. Events and meeting information for several Monterey Bay user group events are posted on the message board.

SOUTHERN CALIF.

Gamenet Bulletin Board System. BBS is devoted 100% to gaming subjects. 24 hours, 20 boards, 10 D&D/RPG boards, Alkahest, professional book reviews. Unending Story, Adventurers' Training Ground, Game Hint, etc. Sysop: L.J. Phone: (213) 541-8039.

The Consultant's Exchange BBS Serving professional computer consultants and students since 1983 with the finest public domain software for the IBM-PC. Featuring consultants list and job list. (714) 842-6348 24 hours.

Thousand Oaks Technical (805) 493-1495. This massive 64 megabyte board has a mind-boggling number of downloadable programs. The board has no bulletin board feature and allows unlimited upload time. Download time is limited depending on upload exchange.

Granada Engineering Group RCP/M (818) 360-5053. Technical information, BBS lists, and help on CP/M assembly language program writing.

Aware II (213) 851-0780. Sports BBS with different discussion boards centered around USFL, baseball, etc.

Junkyard Data (213) 867-9541. Multi-interest board in Norwalk with everything from jokes and for sale items to reviews (movies & software), trivia questions, an adults only section, etc.

Marina Matchup (213) 397-6300. This Mar Vista-based dating board operates with Martian software.

Lynzie's Motherboard North Hollywood; multi-interest board with public boards, entertainers exchange, job exchange info. Runs on IBM-PC with 10 mb storage, operates on Martian Software, runs 24 hours a day. (818) 508-6482.

Bulletin Board System. BBS devoted to handicappers and racing fans in So. Cal. On line every weekend. Log-on: race data for Santa Anita, Hollywood Park and Del Mar. (213) 934-6026.

Videodrome BBS. Where computers and video meet. (213) 324-5882. Open weekdays 4 pm - 2 am, weekends 12 pm - 2 am. A Commodore 64 system.

HUG1. The official BBS of the Hollywood Commodore User Group (HUG). All HUG members and visitors are welcome to drop by. (213) 874-8256.

ASSOCIATIONS

NORTHERN CALIF.

California Software Electronic Consultants (CAL-SEC) California Software and Electronic Consultants Network. Support Groups — Workshops — Legal Referral — Newsletter. $30 Membership or SASE to CAL-SEC, 3046 College Ave. #4. Berkeley, CA 94705.

Community Entrepreneurs Organization (CEO) Business networking group meets around SF area. Invests in new products, markets, brainstorms. Share info. on tech and non-tech business issues. 4 meeting locations, various week nights. Contact Dr. Crandall, P.O. Box 2781, San Rafael, CA 94912. (415) 435-4461.

Computer Professionals For Social Responsibility P.O. Box 717, Palo Alto, CA 94301. (415) 322-3778.

Computer Professionals For Social Responsibility (EAST BAY) 902 Rose Ave., Piedmont, CA 94611. Contact Bruce Joffe, (415) 768-0288 days, (415) 654-5263 eves.

FOCUS-MED (Federation of Computer Users in Medicine). Open to all physicians and health professionals. Practice management consultant registry. (415) 626-4600.

FOCUS-DDS (Federation of Computer Users in Dentistry). Open to all dentists and dental professionals. Practice management consultant registry. (415) 626-4600.

ITRA Independent Technical Representative Association is an organization dedicated to helping people better understand the Personal Computer (IBM). Contact Tim Jones, 870 Market St. #609, San Francisco, CA 94102, (415) 421-4872 for meeting time and date.

MCTUG (formerly Marin County TRS-80 Users' Group). MS-DOS, CP/M and Tandy users group. Meets 7:30 pm on the first Monday of the month at the Larkspur Masonic Lodge, 1122 Magnolia Ave., Larkspur. Contact Dr. Frank Hovell, 907 Sprucewood Court, Petaluma, CA 94952, (707) 762-5740.

NEW METHODS. Listings of Animal and Veterinary groups; book publishers; associations — all fields, manufacturers and related; animal professionals; others available upon request. Contact Ronald S. Lippert, AHT, P.O. Box 22605, San Francisco, CA 94122, (415) 664-3469.

PRACSA (Public Remote Access Computer Standards Association) offers to clubs, schools, and user groups a Speakers Bureau. The purpose of the bureau is to act as a resource to these groups in obtaining speakers of high quality for their meetings. The volunteer speaker is provided free to the group. Contact (408) 262-5150. Meetings 4th Wednesday, 7 pm, Vadic Cafeteria, 222 Caspian Dr., Sunnyvale.

San Bruno Computer Club. Meetings Wednesday 7:30 pm. Call Pete Testart, (415) 952-9309 for information.

San Francisco Computer Society (Formerly the San Francisco First Osborne Group). A society for users of portable computers and/or the CP/M operating system. P.O. Box 783, San Francisco, CA 94101-0783. Meetings on fourth Thursday of the month, St. Aidan's Church, Diamond Heights and Goldmine Dr. in SF. All are invited. Dues $10/yr.

FUN (Friendly Users' Network). A new social and business network for computer people. For information call (415) 567-4448.

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Apple Co-op 290 SW 43rd, Renton, WA 98055. (201) 251-5222.

JUG (Jefferson State Computer Users Group). Many SIGs, newsletter. Dues $5.00 year, some SIGs additional. Contact JUG, P.O. Box 457, Gold Hill, OR 97525-0457.

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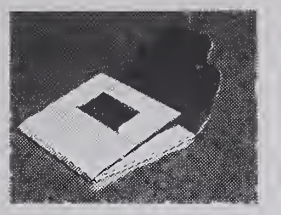

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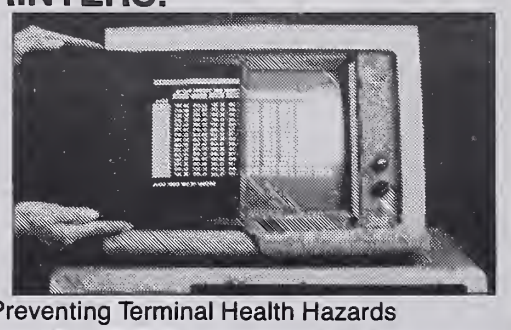

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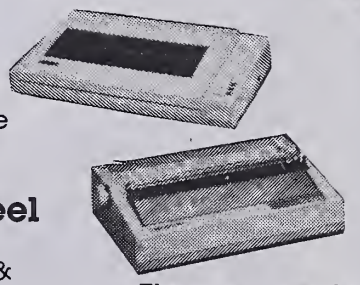

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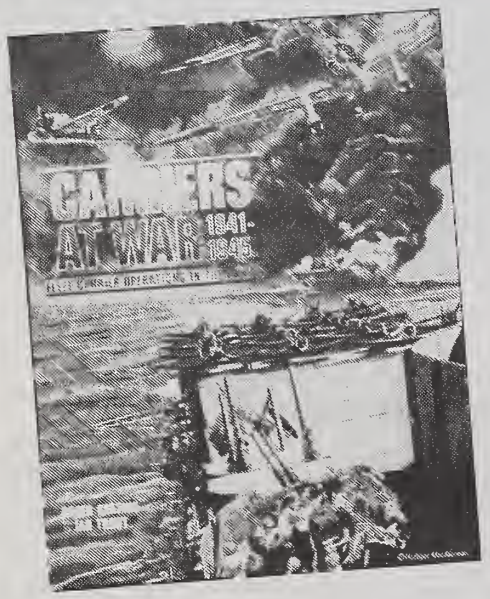

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Franklin Users Group. East Wind Road, Apt. L, Tecumseh, MO 65760. Send SASE for info. Newsletter, BBS in the works.

USER GROUPS

ACTRIX

ACTRIX Computer Enthusiast Society. Membership ($20/yr) provides public domain software, group rates, discounts for owners of Actrix/Access Matrix microcomputers. Meetings at Sunnyvale Community Center, last Wednesday of the month, 7 pm. Contact K. Edward Lynch, 1405 Phelps Ave. #29, San Jose 95117, (408) 756-5104, for more information.

ADAM

California's Adam Users' Group. For a sample issue of the newsletter and a hardware-software catalog free, send your address to CAUG, 1643 Beach St., San Francisco, CA 94123.

APPLE

San Francisco Apple Core Meets every third Saturday of the month at Fort Mason, Bldg. C, Room 100 at 10 am. New products and innovations are featured for Apple II, Apple III, Macintosh and Lisa. Public domain library, SIGs, tech help, newsletter. $20 per year membership. Info: SF Apple Core, 1515 Sloat Blvd., Suite 2, San Francisco, CA 94132. (415) 566-2342 (voice), (415) 474-8608 (BBS/modem).

SPCA (Society For The Prevention of Cruelty To Apples) The Society for the Prevention of Cruelty to Apples is a club for owners of Apple, Apple-compatible (Franklin, etc.) and Macintosh personal computers. It meets at 7:30 pm on the last Wednesday of the month at Thornton Jr. High School, on Thornton Ave. at Dusterberry, in Fremont. Contact SPCA Publicity Chairman Milton Buck, 5246 Channel Drive, Newark, or call (415) 794-2822 for more info.

Association of Apple 32 Users Macintosh, Lisa. An association of "knowledge workers" who wish to share information on products, applications, and events. User-developed, non-copyrighted software, SIGS, newsletter. P.O. Box 634, Santa Clara, CA 95052.

Apple Eaters Users Group. Apple II users group meets monthly (first Thursday) at Hayward Software Centre. Operates, with San Leandro H.S., a 24 hr. free BBS at (415) 577-3409. Meetings 22406 Foothill Blvd., Hayward. Contact Bob Shayler, 2200 Bancroft Ave., San Leandro, CA 94577, for more information.

Pen Apple. Pen Apple Users Group meets 2nd Thursday of each month at AMPEX cafeteria, 7:30 pm, Redwood City. Draco Bulletin Board. Contact Karl Shores (415) 366-0339.

Diablo Valley Apple Users. Meets 3rd Friday of each month at EMS, 2371 Stanwell Dr., Concord, at 7 pm. Contact Lynn Hart, P.O. Box 5031, Concord, CA 94524, (415) 798-9281.

APPLE

South Peninsula Apple Computer Enthusiasts (c/o David Harris, P.O. Box 1257, Palo Alto, CA 94302) normally meets near the Varian Credit Union, Bldg. 4C, 611 Hansen Way, Palo Alto, at 7:30 pm on the first Tuesday of every month to exchange information about available hardware, software, events, publications, and methods on Apples, and to encourage collaboration on projects. Call (415) 856-9126 — answering machine takes 30-second messages.

ASHTON-TATE

Framework/Editor Bay Area Users Group (FREDBUG) Purpose of the group is to share programming and applications techniques under FRAMEWORK for the business and technical professional. Call for info: Rudi Wiedemann, (408) 730-4159.

San Francisco dBase User Group For advanced users and programmers. Meets once per month. Membership required for attendance. Contact Frank A. De Coster, 1100 Gough St., San Francisco, CA 94109, (415) 474-6693.

dBase Users Group. Meets 2nd Tuesday each month at Software Center, 1975 Diamond Blvd. #C220, Concord (Willows Shopping Center), 7:30-9 pm. Contact Cyndy Kolnick (415) 235-7317 for information.

ATARI

ABACUS (Atari Bay Area Computer Users Society) All ATARI users or prospective users are welcome. Membership ($15/year) provides public domain software, low cost blank disks, monthly newsletter, group prices on hardware and software, help from experts, low cost classes for beginners. Meetings first Saturday of the month, Fort Mason, SF, Room 300, Bldg. C, 10 am-2 pm. Contact Bill Zinn, P.O. Box 1823, Mill Valley, CA 94941. (415) 753-8483.

A.C.M.E. (Atari Computer — Marin Enthusiasts) Meets monthly in Marin, third Thursday evening monthly from 7 pm on. Gallinas School, 177 N. San Pedro Rd., San Rafael. Contact Bruce Frank, (415) 435-6020, P.O. Box 222, Tiburon, CA 94920.

Diablo Valley Atari Computer Enthusiasts (D.A.C.E.) Contact Richard C. Foster, Secretary, 3760 Lindero Drive, Concord, CA 94519.

Bay Area Atari Users Group We have a 24-hour BBS at (408) 578-2390. Meetings at Dysan Auditorium, 4201 Patrick Henry Drive, Santa Clara, CA 95050, first Monday of the month. Contact Frank Nagle, P.O. Box 50459, Palo Alto, CA 94303, (415) 940-1323 for more info.

San Leandro Computer Club Although open to all computer users, this group is primarily oriented to Atari computer owners. Our club is considered one of the best in the country, worthy of consideration by both novices and experts. Meetings 1st Tuesday of the month at San Leandro Community Library, 300 Estudillo Ave., San Leandro, CA. Contact Phil Mitchell, P.O. Box 1525, San Leandro, CA 94577-0152 for more info, or call (415) 351-2208.

ATTACHE

Attache UNL Otrona may be dead, but the Attache Users News Letter Lives ONII Contact Jim Ayers, 301 Poplar St., Mill Valley, CA 94941. (415) 388-4805. Meetings 7:30 pm, 2nd Wednesday.

BASIS

Bay BUG Basis 108 Users meet every first Friday of the month at College of Alameda Computer Room, 7:30 pm. Contact Roger Bernhardt, 536 Mission, San Francisco or call (415) 221-0262 for more information.

CASIO

Casio Research Project. Discussion and collaboration; creation of plug-in expansion board using VLSI chip. Share programs. Meetings TBA. Contact Julius M. Zebrowski, (415) 969-9458.

COMMODORE

San Francisco Commodore Users Group Public domain library, classes, tech help, in depth demonstrations, monthly newsletters, Epromer, savings on purchases, all this and more. BBS # (415) 567-5046 300 baud. Meeting address 256 Laguna Honda Blvd., San Francisco, 3rd Tuesday of the month, 7:30 pm. Contact Roger Tierce, 278 27th Ave. # 102, SF, CA 94121, (415) 387-0225.

20/64 Computer Users Group — San Jose Meets first Sunday of the month at the Theatre Building, San Jose City College, from 6 to 9 pm. (Donations requested to help defray cost of renting meeting space.) Call Herb Miller, (408) 253-2064 for more info, or write P.O. Box 18473, San Jose 95158.

20/64 Computer Users Group — San Jose North Valley Meets second Saturday of the month at the second floor Community Room of Montgomery Ward's, Capitol and McKee Roads, San Jose, from 10 am to noon. (408) 253-2064.

20/64 Club The Cupertino chapter of the 20/64 club for Commodore users meets the second Sunday of each month, Cupertino Public Library, 6 pm. Contact Rex Ackerman, P.O. Box 61063, Sunnyvale, CA 94086. Phone (408) 245-7270.

20/64 Computer Users Group — Gilroy Meets the second Wednesday of the month at the Gilroy Public Library, 7397 Rosana Street, Gilroy, from 7 to 9 pm. (408) 253-2064.

Marin Commodore Club Meets at Redwood High School, Corte Madera. Visitors welcome. Contact Elmer Johnson for information: 665 Las Colindas, San Rafael, (415) 479-0426.

Diablo Valley Commodore Users Group Meetings Contra Costa Water District Auditorium, 1331 Concord Ave., Concord, CA, second Thursday of month at 7:30 pm. Write DVCUG, P.O. Box 27155, Concord, CA 94527, or call (415) 838-2838 for more info.

20/64 Computer Users Group — Campbell Meets the fourth Tuesday of the month at the Campbell Public Library, 70 North Central Avenue, Campbell, from 6:30 to 9:30 pm. (408) 253-2064.

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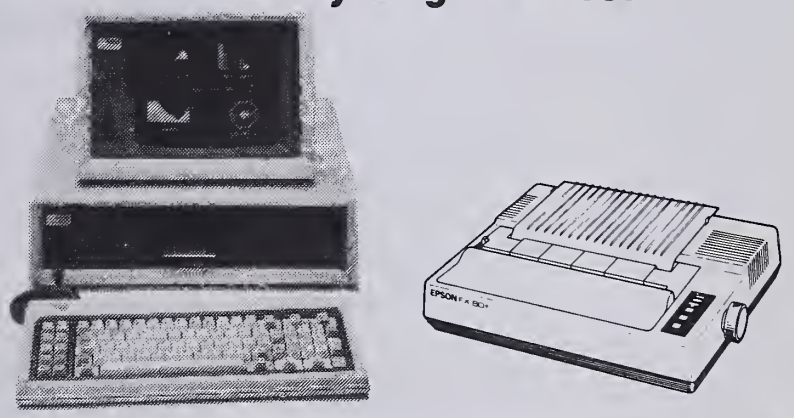

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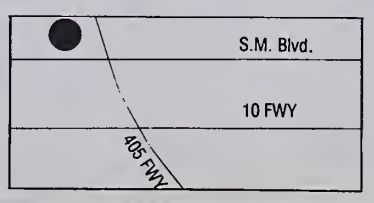

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USER GROUP NETWORK

COMMODORE

Napa Valley Commodore Computer Club Meets first and third Mondays, 7:30 pm, at Northwood Elementary School, 2214 Berk St., Napa. Take Redwood Road to Dover St. to Berk St. Contact President Dick Bull (707) 257-3773 or vice-president Roger Pruym (707) 253-1690 for more info.

Lake County Commodore Users Group Contact Al Reuss, P.O. Box 388, Clearlake, CA 95422.

PUG of the Silicon Valley Commodore 64 (PETs, 8032s, 2001s also). Friendly computer group established back in 1977 with a very extensive disk library. No dues, donations only. Bring your machines to the meeting or use club dual disk drive to copy programs. Meets at cafeteria, Ford Aerospace Bldg. #3, 3939 Fabian Way, Palo Alto, CA 94303, 1st Wednesdays of the month, 7-10 pm. Contact Marvin Vander Kooi, (408) 446-1936.

Peninsula Commodore User Group Public domain library, demonstrations, user help, newsletter. Membership is $25 per year. Non-members pay $2 at door. Meetings are 3rd Tuesday of each month. Meeting place is the Church of the Good Shepherd Hall, 1300 5th Ave., Belmont (across from city hall). For more info call (415) 595-5452 between 9 am and 6 pm, or call our BBS at the same number after 6 pm.

The Commodore Connection. Newsletter, BBS, public domain disks, dealer support and more. Approved member of Commodore World. Call (415) 458-3318 8 am - 8 pm or 8 pm - 8 am for the BBS. Meetings 1st and 3rd Mondays, Neighborhood Center, Civic Ave., Pittsburg, CA, 7:30 pm.

Commodore User's Group of Hayward. The CUG of Hayward meets the first Saturday of each month from 3 to 54 pm at the Commodore Computer Center located at 22521 2nd St., Hayward. Call (415) 886-1916 evenings between 5 - 8 pm or (415) 537-1323 days between 10 am and 5 pm.

NBUG (North Bay Users Group). Contact Jim Stephens, president, 124 Delgado St., Vallejo, CA 94591, or write P.O. Box 7116, Vallejo, CA 94590.

COMPAQ

SF Compaq. A Compaq user's group is being forming in the SF Bay Area. Contact David J. Blow, 439 Hoffman Ave., SF, CA 94114, (415) 221-2768.

CROMEMCO

Silicon Valley Cromemco Users Meets 4th Tuesday of the month at MCM Enterprises. 215 Hamilton Avenue, Palo Alto, CA. Call Ken Brown at (415) 327-8080 for details.

EAGLE

Eagle Computer Users Group (ECUG) Forum for exchange of info and ideas relating to Eagle Computers. Meetings and classes in WP, Data Base, Modems, CP/M, MS/DOS, etc. Meetings at Mercury Savings and Loan, 859 Blossom Hill Road, San Jose, fourth Monday of the month, 7 - 9 pm. Contact David Meisman, P.O. Box 8431, San Jose, CA 95155, (408) 973-1254/973-1460.

EAGLE

Screaming Eagles user group is for Eagle II (8-bit) machines and programs. Public domain disks, newsletter (quarterly, $5), hardware and software discounts, tech help and SIGs. CompuServe PCS-54 anytime; contact Leslie Lieurance, 101 Parnassus #1, San Francisco, CA 94117 (415) 661-4362 (voice).

ENABLE

ENABLE Users Group Now forming. Contact Lion Goodman, 38 Glen Dr., Mill Valley, CA 94941. (415) 383-2337.

EPSON

Bay Area Epson Salts — Epson 125 Del Centro, Millbrae, CA 94030, (415) 697-0567.

Epson Users of San Francisco Bay Area Epson group has nationally circulated newsletter *Valnews*: 400 members — mostly QX-10 owners, growing software library. Meetings focus on mutual support. Mainly Valdocs and other applications. Meetings first Thursdays. 7 p.m. Fort Mason Center, Bldg. C, Room 205, San Francisco. Contact Alan Magary, 904 Irving St., Suite 271, San Francisco CA 94122, (415) 661-9270.

Napa Valley Epson Users Group 1307 Hestia Way, Napa, CA 94558, (707) 253-8727.

FORTH

FORTH Interest Group, Berkeley Chapter. Meets 2nd Saturday of the month at 1 pm, 10 Evans Hall, UC Berkeley. Contact Mike Perry, (415) 644-3421.

FORTH Interest Group, Monterey/Salinas Chapter. Contact Bud Devins, (408) 633-3253.

FORTH Interest Group, Sacramento Chapter. Meets 2nd Tuesday of the month, 7 pm, 170B 59th St., Room C. Contact Tom Ghormley (916) 444-7775.

FORTH Interest Group, Bay Area Chapter. Meets 4th Saturday of the month, 10 am advanced, 1 pm beginning, at ABC Christian School Auditorium, Dartmouth and San Carlos Ave., San Carlos (408) 277-0668.

FORTH Interest Group, Stockton chapter. Contact Doug Dillon (209) 931-2448.

GAVILAN

Gavilan Users Group. BBS (408) 978-DATA 300/1200. Meeting 2nd Thursday 7:30 pm, 10250 De Anza Blvd., Cupertino. Info call Bob Brown (408) 379-2774.

HEATHKIT

San Jose Heathkit Users Group. Meets first Wednesday at 7 pm at the Heathkit store on South Bascom Ave. in Campbell.

IBM

San Francisco PC Users Group Largest SF group focusing on IBM and compatibles. Over 150 disks of public domain software, excellent monthly newsletter. 800+ members, $25/year. Please contact Gilbert Orlik, (415) 931-0377.

Sacramento IBM-PC Users Group. P.O. Box 685, Citrus Heights, CA 95610. Contact George W. Lefler (916) 988-2274.

IBM

South County PC Users Group Meetings held second Thursday of each month, at Software Center, 22406 Foothill Blvd., Hayward, CA. Public Domain club disks, newsletter and help on MS-DOS problems. Contact Debra Taylor, P.O. Box 7656, Fremont CA 94537-7656 for more info, or call (415) 276-5111.

SVCS (Silicon Valley Computer Society). IBM users group. Meets second Wednesday at 7 pm at the Westinghouse audltorium located on the corner of Duane and Britton Aves., in Sunnyvale.

California PC LAW Users Group, 1625 The Alameda, Suite 511, San Jose, CA 95126. (408) 289-1711.

KAYPRO

Santa Rosa KUG Owners of Kaypro computers or CP/M systems are invited to join the SRKUG. We conduct seminars and software instruction/training. Come join the fun. Meetings 3rd Thursdays of the month at 7 pm. Call for meeting address: James Daniels, 1029 Damon Court, Santa Rosa, CA 95401. (707) 575-8149.

BAKUP (Bay Area Kaypro Users and Programmers). One of largest Kaypro user groups in country. Meets 3rd Tuesday of month, 7:30 pm. We support our RBBS/RCPM for members, publish a monthly newsletter, have a 40 volume software library, and a lot of fellow KP'ers! Write for info, $10 per year to join: Membership Coordinator, P.O. Box 20181, Oakland, CA 94620.

KAYFUN Peninsula Kaypro Users Group meets second Thursday of every month at 7:30 pm in the ground floor social room, 222 Laurel St., San Carlos. Bimonthly newsletter, public domain software library, and publication library. Membership $12 per year. Every third meeting a Free Forum night dedicated to individual help. Contact Larry Welling, 222 Laurel St. #310, San Carlos, CA 94070, (415) 593-9981.

South Bay Kaypro Users Group (SBKUG). Meetings at 10400 Torre Ave., Cupertino. We have an extensive library of public domain software, including over 200 diskettes of the SIG/M library. The floor is open for questions at each meeting, and we welcome new members at all levels of ability. Bring your machine, or at least your diskettes. For meeting night call Chuck Hansen at (408) 257-5244, or write P.O. Box 390088, Mountain View, CA 94039-0088.

MACINTOSH

MacNexus. Sacramento's Macintosh User Group. 150 members, but still informal. Extensive public domain collection. Contact Gail McGovern, P.O. Box 60908, Sacramento, CA 95860, (916) 446-2411. Meetings 3rd Thursdays, 6:30 pm, Almond Plaza, 17th & C, Sacramento.

EBMUG (East Bay Macintosh User's Group) Friendly, informal. Public domain software and computer book library. Information exchange. Speakers. Product discounts. Free admission. Meets at West Berkeley Public Library, 1125 University Ave., Berkeley, CA, third Tuesday of each month at 7:30 pm. Contact Shep Tamler, 5901 Broadway #7, Oakland, CA 94618. (415) 653-5849.

MACINTOSH

MacProgram Unlimited. Meets monthly. Informal with hands-on testing of different programs. Public domain and standard programs in rental library. Meets Albany YWCA, Kains and Solano, Saturday 9:30 am. Contact William Gong, P.O. Box 7704, Berkeley, CA 94707. (415) 527-1756.

Stanford Macintosh User Group. P.O. Box 6508, Stanford, CA 94305. (415) 854-2118.

Bay Area MacForum New and experienced Macintosh users. 2 monthly meetings: one immediately following San Francisco Apple Core meeting at Fort Mason, Building C, Room 300, San Francisco, 3rd Saturday of the month; one at Software Center, The Willows Shopping Center in Concord, second Monday of the month, 7 pm - 9 pm. For info: 1515 Sloat Blvd. # 2, San Francisco, CA 94132, (415) 566-2342

Barkeley Macintosh Users Group meets every Thursday evening at 5:30 pm on the UC Berkeley campus, in Physical Sciences Lecture Hall (near East Gate). Speakers, discussions, questions and answers. Developer SIG meets every other Wednesday at 5:30 pm on UCB campus in Dwinelle Hall lobby. For more info contact Reese Jones, Director, 1442A Walnut St., Suite #153, Berkeley, CA 94709 or call (415) 849-9114.

MORROW

BAMDUA (Bay Area Micro Decision Users Association). Meets on last Tuesday of the month, 7:30 pm. Call (415) 644-2805 for location. Monthly newsletter.

MINDSET

First Mindset Users Group Monthly meetings and newsletters cover advanced topics in computer graphics, animation, and video production using the Mindset Personal Computer and accessories. Meetings at various Bay Area locations, 3rd Monday of the month, 7 p.m. Contact Tim Negris, 138 Village Ct. #6, Walnut Creek, CA 94596, or call (415) 934-1448.

NORTHSTAR

INSUA Largest North Star users group in the world. Members' newsletter and software library. Membership dues $20. Contact George Riddle, P.O. Box 2910, Fairfield, CA 94533.

OSBORNE

East Bay FOG (First Osborne Group) Osborne, Kaypro and Morrow. Meets second Wednesday of the month at B&B Electric, 2832 Ford Street, Oakland. 6 pm workshops, 7:30 pm program. For info contact 5497 Taft Ave., Oakland, CA 94518; phone (415) 272-9099.

SMOG3 Osborne User Group (Peninsula) Meets first and second Monday of every month at Crane Place, 1331 Crane, Menlo Park. Call Phil Moore at (415) 325-2442.

MTDOG (Mt. Diablo Chapter—First Osborne Group) Meetings 7 pm, 3rd Wednesday each month in Diablo Room (top floor), SF Federal Savings and Loan, 1660 Olympic Blvd. (cross-street: California), Walnut Creek. Software library, software/hardware/service demonstrations, sharing problems and solutions. For meeting info contact Sylvia Tobias, (415) 376-4720.

PICONET

Piconet CP/M Users Group. Meets second Thursday at 7 pm at the Stanford Linear Accelerator Auditorium, Palo Alto. The password at the gate is "Piconet Meeting."

PIED PIPER

Pied Piper Users Group Owners of Pied Piper CP/M based computer are invited to call or attend the PPUG. Meets last Tuesday of the month at 7:30 pm. Please call (415) 638-1146. Meeting address: 10950 Elvessa St., Oakland 94605.

R2E

North Bay R2E Forming user group for R2E System microcomputer users. Please call (415) 235-1598 for information.

RADIO SHACK/TRS

Byte Bandits of America TRS-80's workshop computers club — bimonthly meetings — 2nd Saturday and 4th Wednesday of the month. Bring your computers. Free membership. Modem (408) 374-3974. Meetings at 780 Many Ave., Campbell, CA. For info contact R.W. Brown, (408) 379-2774.

TRS-80 Computer Society of Diablo Valley The purpose of this group is the sharing of information, problem solving, support group, purchasing discounts, support for professional, business and educational users of Radio Shack computers. Out-of-area members welcome. Meetings second Tuesdays of the month, Willow Creek Center, 1026 Mohr Lane, Concord, 7:30-9:30 pm. Doors open at 7. Contact Roy or Sue Copeland, P.O. Box 23438, Pleasant Hill, CA 94523, (415) 372-7003.

MCTUG (Marin County TRS-80 Users Group). Meets once a month on the second Monday. Meetings start promptly at 7:30 pm in the Larkspur Masonic Lodge, 1122 Magnolia Avenue, Larkspur. For information contact Frank Hovell (707) 762-5740 or Lois Johnstad (415) 453-5412.

SAMNA Word

SAMNA Word III San Francisco or East Bay telephone network forming to discuss glitches, ideas, and interface hassles. Contact Shanti Pederson, (415) 982-8898.

SANYO

Sanyo 1100/1200 User Group of the San Francisco Bay Area. P.O. Box 297, San Mateo, 8-10 pm, every 2nd Friday of month. Send large self-addressed stamped envelope for copy of newsletter.

Sanyo MBC 1100-1150 user group now forming in Oakland. Call or write (415) 534-1981, 5885 Bancroft Ave., Oakland 94605 for meeting time and location.

Sanyo User Group of the San Francisco Bay Area meets 2nd Friday of the month at Sears Savings Bank, 1820 S. Grant, San Mateo, 8 - 10 pm. Devoted to Sanyo 8-bit CP/M machines: MBC 1000, 1100, 1200 series. For info write 1260 Westwood St., Redwood City, CA 94061.

Sanyo National Users Group. SNUG is a central resource for Sanyo information and public domain. Inquiries welcome! Contact Ken Taylor, 4008 Pasadena Dr., San Mateo, CA 94403. (415) 345-7781.

Santa Clara Sanyo Users Group. SCSUG's 24 hour BBS (415) 659-9169. Support for MBC-55X Systems. Meetings at 1 West Campbell Ave. #80, Campbell, 7-10 pm every 3rd Wednesday of the month. Contact Jim Thomas, (415) 651-0201 for info.

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TEXAS INSTRUMENTS

South Bay T.I. User Group. One general meeting per month. We have training session, library and own bulletin board (408) 578-6264. Meets first Thursday of each month at 7:00 pm, 1368 N. 4th St., San Jose. Contact Fred Roettger, v.p., for info: (408) 253-3510.

Nor-Cal TI 99/4A Users Group. Learn more about your Texas Instruments 99/4A computer. Free software, sources ofr hardware and software. Contact Dave Strady, 324 Howard St., Petaluma 94952, (707) 762-6561. Meetings at Retail Clerks' Union Hall, 382 Tesconi Ct., Santa Rosa, CA, first Wednesday of the month at 7 pm.

TIMEX/SINCLAIR

East Bay Timex/Sinclair User Group (EBZUG) Timex/Sinclair user group. S/W library and newsletter. Meets at West Branch of Berkeley Public Library at corner of University and San Pablo. Meets 3rd Tuesday of the month at 7:30 pm. Contact Rick Link. 654 40th St., Richmond, CA 94805. (415) 234-3310.

Peninsula Timex/Sinclair User Group (PUG) Timex/Sinclair user group. S/W library and newsletter. Meets at Peninsula Hospital, 1783 El Camino, Burlingame. Meets 3rd Sunday of the month at 1 pm. Contact George Mockridge, 263 Gateway #107, Pacifica, CA 94044. (415) 359-3198.

Silicon Valley Timex/Sinclair User Group (SVTSUG) Timex/Sinclair user group. S/W library and newsletter. Meets at Dysan Corp., 5201 Patrick Henry Drive, Santa Clara. Meets last Tuesday of the month at 7 pm. Contact Rita Carr, P.O. Box 4133, Santa Clara, CA 94044-0133. (408) 738-2888 ext. 45.

UNIX

The Unix C-Club Seminars, public domain softwares, information exchange, Unix hardwares and softwares. Discount on purchases. Meets 2nd Saturday of each month at 10 am. Call Gilbert B. Dalit at (415) 348-6723 or (408) 238-5587 for more information, or write: 122 2nd Ave., Suite 214, San Mateo, CA 94401.

VECTOR

Bay Area Vector Group Meeting held regularly. Please call to be put on mailing list. You will be informed of next meeting! Contact Peter Tjeerdsma, 764 Cole St. #4, San Francisco, CA 94117. Phone (415) 681-0308.

VICTOR

Victor° Group is the San Francisco Bay Area Victor User's Group. We have three chapters — East Bay, South Bay, and San Francisco. Members can attend meetings at any of the chapters or all of them. The more the merrier. Dues are $30 a year, which includes a subscription to VictorTalk, membership in a Victor-exclusive discount buying cooperative, and the right to buy from our public domain library at a discount. South Bay meetings are held the first Thursday of each month at Computer Insights, 40957 Grimmer Blvd., Fremont at 7:30 pm. Contact John Kimber (415) 797-6423. East Bay meetings are held the second Wednesday of the month at 7:30 pm; contact Boardman Moore (415) 283-3285 for location and further info. San Francisco meetings are held the third Sunday of the month at 5 pm at Homestead Savings, 130 West Portal, San Francisco. Contact Joe Zmuda, (415) 584-4048.

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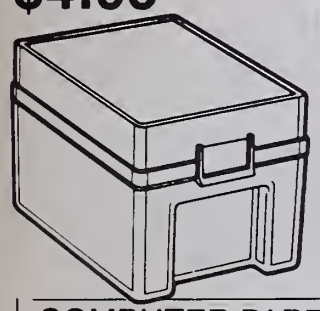

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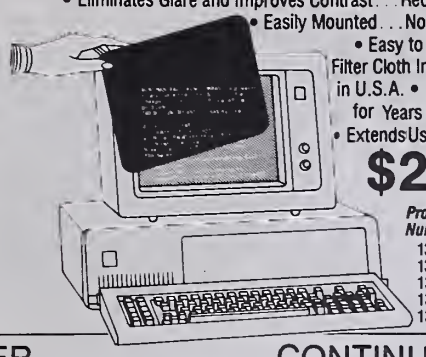

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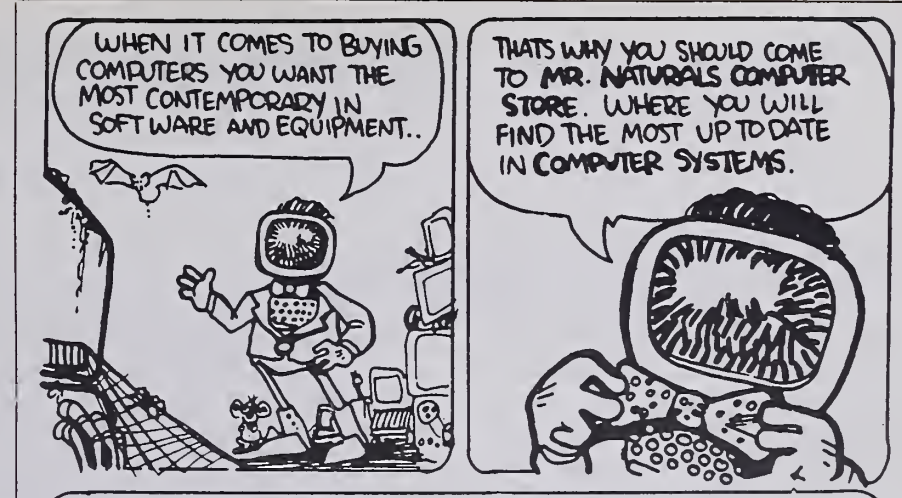
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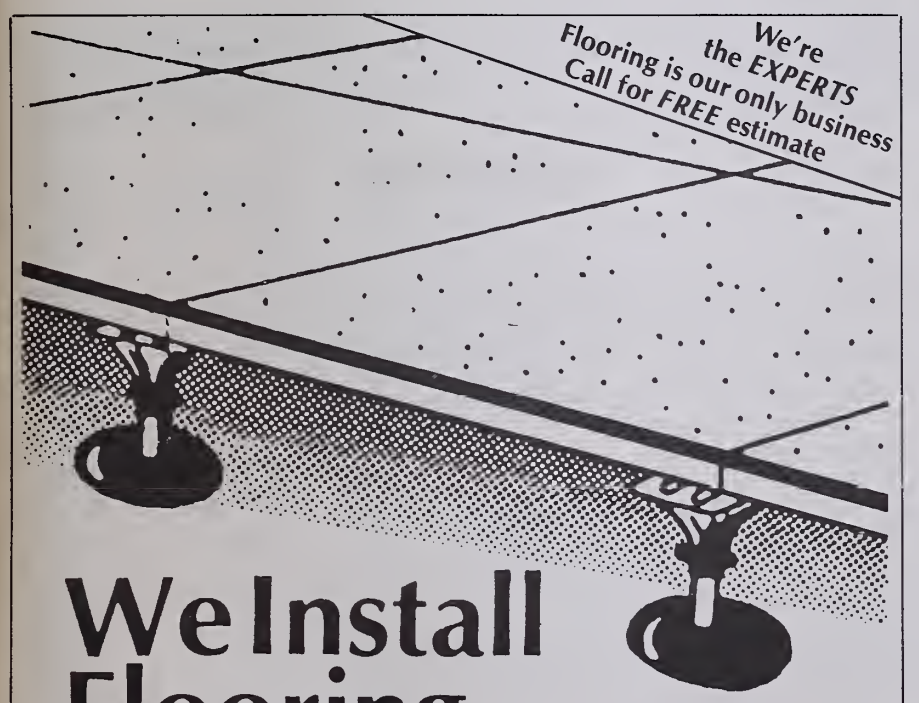

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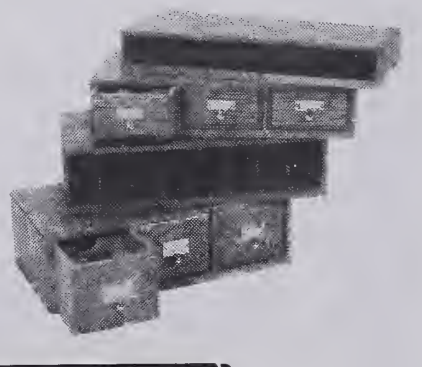

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continued from page 62

Darker Side Of Hackerdom

hospital and government research computers: "... the 414s had erased a few files in an attempt to cover their hacking tracks. They later discovered that they had erased a file incorrectly and were unable to correct the situation. This was bad enough from the Inner Circle's point of view, but worse yet was the fact that the damaged file was in a computer at the Sloan-Kettering Cancer Center in New York. The idea that technological vandals could, intentionally or otherwise, erase information at a cancer research and treatment center was one of the aspects of the case that everyone, including the Inner Circle, found appalling."

Says Maxfield, "Statements like this are self-serving, because the Inner Circle probably did ten times as much damage as the 414s." One member, Mandrake, deleted massive portions of GTE Telemail, in May, 1983, in retaliation for the Wizard of Arpanet (a 14-year-old hacker) eliminating some of Mandrake's (illicit, naturally) accounts. The Wizard fought back with further deletions, and major disruption resulted. This wholesale prank-playing on the users of the system and on each other finally prompted Telemail to call in the FBI on May 30. The two were busted on October 12, 1983.

Further exploits by Mandrake included posting stolen telephone service credit card numbers on electronic bulletin boards, while the Wizard hacked into AUTOVON (a telephone network that links all US Air Force computers) and electronically published information on how to do it.

Landreth continues: "Very soon after we heard about [Mandrake's disruption of Telemail], we closed the Inner Circle to him. Of course, that meant changing the password procedures on all of our secret bulletin boards. We didn't want to go to that much trouble very often, so we screened new applicants more carefully after that, and even at the height of our activities, in mid-1983, the Inner Circle numbered no more than fifteen."

Maxfield disputes Landreth's version. "They didn't kick Mandrake out until September, shortly before his bust," he says. "And the 'careful screening' meant only that prospective members had to bring something of value with them, stolen telephone access codes, or methods of entry into secure computer systems, for example."

Maxfield's files include detailed information about his own involvement with the Inner Circle since its beginning. He was never technically a member, but he had access to everything the members had access to, including passwords to all their BBS's and log-on procedures to the computers they entered.

Maxfield particularly scoffs at Landreth's setting himself up as the ultimate hacker, giving advice on how to catch other hackers, when, in fact, he himself was caught by another hacker without even being aware of how he was caught. Investigation by Cable Pair led indirectly to the catching of The Cracker. The activities of some of the rowdier members of the Inner Circle, notably Mandrake and the Wizard of Arpanet, drew the attention of the authorities. These two were identified by Maxfield, who was flown by the FBI to Telemail headquarters, where, by reading intercepted messages, he was able to supply names and phone numbers for several hackers whose identities would not otherwise have been known. Thirteen members were busted on October 12, 1983. Landreth might have escaped, but one of the apprehended hackers "squealed." The next day, The Cracker and "Bob Hardy," the leader of P.H.A.L.S.E. (Phreaks, Hackers And Laundromat Service Employees) and future editor of the hacker newsletter *2600*, were also caught.

There are other inaccuracies in *Out Of The Inner Circle*. Landreth sets the founding of the Inner Circle at "early 1982," while Maxfield points out that "The Inner Circle didn't start till 1983." Landreth quotes the Wizard of Arpanet, "who said, sometime in early 1982, 'Networks are a hacker's fantasy.'" Maxfield corrects the account somewhat: "The Wizard is the mysterious Alpha Hacker that Landreth mentions early in the book. He was later known as The Hacker and The Priest. He didn't become the Wizard of Arpanet until *1983*, and did not even own a modem until December, 1982."

Maxfield takes exception to these seemingly small lapses in memory because they are part of attempts to raise the Inner Circle to elite status, a claim to be the first "real" hacker gang, antedating even the notorious 414s. The truth, though, is that the Inner Circle started later. And there were hacker groups, notably in Los Angeles, as early as 1980.

In an attempt to downplay the seriousness of hacker activities, Landreth speaks of the seizure of computer equipment and subsequent prosecution. "BBS operators have been subjected to arrest and the first stages of criminal prosecution, and in every case I know of so far, they have been given back their equipment before the case has gone to court."

While the FBI normally conducts its own investigations, the agents had insufficient knowledge of the world of hackers and phreaks to enter it themselves.

Maxfield denies this notion. He maintains, "In most cases in which BBS's are involved in hacker activity, the equipment has been confiscated and not returned, and the operators of the systems prosecuted, and in many instances convicted of wire fraud, credit card fraud, and similar offenses."

Among Cable Pair's hundreds of pages of printouts is a dump of the Securityland BBS, the supposedly secure board in the Los Angeles area run by Napoleon Bonaparte and used by the Inner Circle. These same messages were seized by the FBI on October 12, 1983 in its raid on that board. One of the entries, anomalous spelling and all, reads:

AS-PAUSE AO-ABORT
AC-MAIN MENU
FROM: The Cracker
ACCT#: 00009
TO: All non-FEDS
ABOUT: Sunday sermon

For those of you poor souls who have NEVER been on Compuserve here is their demo acount (much like stcdmo but more interesting and harder to crash)

77770,101 Free-Demo

Vax Hackers- Try Logging to the Vax at T04141 Demo Demo and type $'type testll.dat' (exclude quotes) I used this program to get 3 passwords on that Vax untill they cought it (yep, call quickly) and removed DEMO from all the groups. (now DEMO can't write to other DIRs) anyway, this program with changes to suit the operating system will work on 20–35% of all Vaxs today ... Try one on your favorite Vax ...

The FBI cannot easily prosecute these electronic burglars because pertinent legislation is still in its infancy. Laws against computer intrusion are just beginning to be passed. So far, on the federal level, they exist only for improper entry into the computers of government and those of financial institutions. The problem is that there is no precedent on which to base convictions; prosecutors are reluctant to try cases with no precedent, for fear of hampering those to follow.

Information provided by Maxfield and other experts on computer crime, such as Donn Parker of SRI International (author of *Fighting Computer Crime* and *Crime By Computer*, the two classic texts in the field), may help bring about new legislation. And, with information supplied by Cable Pair, his agents, and others, law enforcement agencies will continue to make more extensive raids.

Maxfield continues to supply authorities with evidence of illicit activities. On April 18, 1985, Cosmos, a Detroit board, and on April 29, World of Cryton, a Milwaukee BBS, were searched and had equipment seized by authorities. No arrests were made, but charges will likely be placed against some of the hackers soon.

"Hackers Busted in Nationwide Computer Scam" read the headline on April 30, 1985, over an article detailing the arrests of six high school students by the Secret Service in Waukesha, Wisconsin. The students had used stolen credit card numbers to order computer equipment and make free phone calls. The numbers had been posted on electronic bulletin boards that also contained detailed instructions on how to use the numbers to obtain free goods and services.

On May 23, 1985, two notorious pirate BBS's, Sherwood Forest II and Sherwood Forest III, were searched and had their equipment seized by members of the Secret Service investigating credit card fraud. Since the raids were due indirectly to information supplied by Cable Pair, Maxfield has been told by one of his own informants that a price has been placed on his head. □

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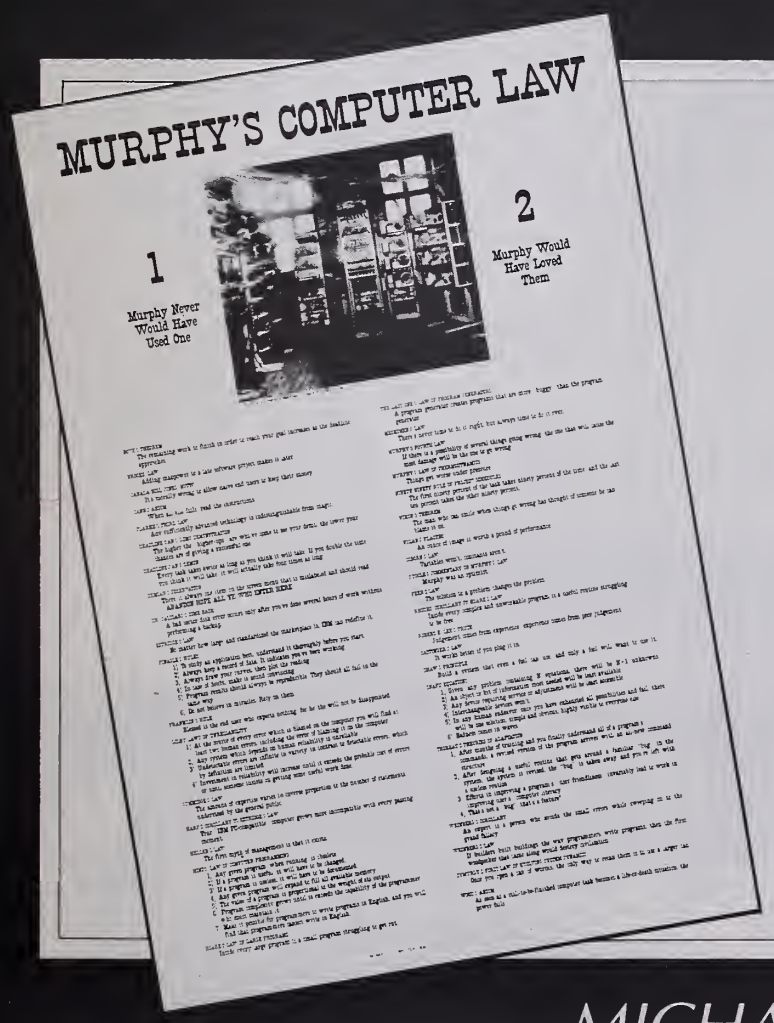

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One of the agonizing problems that many users encounter when buying their hardware and software through the mail is the lack of technical support they receive after their purchase. Often, a mail-order company will turn its back on a consumer after a sale, leaving the person with little technical know-how stranded with a new investment. As a last resort, the buyer will seek help from the manufacturer or the software publisher.

An alternative to the above situation is MicroFlash Computer Systems, Inc., a mail-order company in Concord whose "we support what we sell" philosophy not only means technical support for its customers, but also takes the weight of having to deal with clients off manufacturers and publishers. According to MicroFlash's president, Nancy Comstock, "Mail-order companies have been getting a negative connotation in the industry because a lot of manufacturers and publishers don't like the burden of giving technical support. Our guarantee says, 'Don't call the publisher or manufacturer—call us!' By doing so, we've been in good standing with the vendors."

Maintaining its status with vendors is important to MicroFlash, as Comstock points out: "Otherwise, the less support we get from them will in turn mean less support for our customers. Also, by having the strength of the vendors behind us, we are usually able to special-order new hardware, software, and peripherals due to our credibility." Not to mention that MicroFlash's strong vendor ties have enabled the company to become highly visible, and as a result, "We have established our ability to sell," says Comstock.

Indeed. The mail-order service offers approximately 5,000 different computer products to choose from for IBM PC and compatibles, Apple, Apple II series, Macintosh, and a wide range of others. In addition, MicroFlash's teleservice enables products to be "just a phone call away," while salespeople on stand-by have access to a complete and updated library of MicroFlash's products in order to answer any questions a customer may have. For users with modems, MicroFlash offers an online bulletin board which features about 500 public domain software programs that anyone can download for their own use. The bulletin board is a community service and is free of charge.

MicroFlash has another dimension that distinguishes it from other mail-order services. Aside from taking mail orders, the company has a systems division which Comstock says, "holds weekend seminars, offers on-site services (training, installation, and programming), and is also targeting networks.

PHOTO: MARY EISENHART

The folks at MicroFlash are here to help, with friendly support for everything they sell.

Which is one reason why Comstock says MicroFlash keeps abreast of the current market. Recognized as one of the original mail-order companies when it began in 1981, MicroFlash has always adapted with the ever-changing computer industry. "When my partner, Dennis Bowman, and I first started out, there were generally very few companies in the country doing what we were doing; peripheral mail-orders. First, we supported Apple II and we still do. Then early in 1982, we saw IBM PCs coming down the pike, so we geared up for that and ended up advertising in *PC World*.

However, over the last four years, Comstock and Bowman discovered that the mail order market was no longer isolated. "There is more competition now," confirms Comstock, but with her extensive sales background in wholesale and retail paired with Bowman's high-tech expertise, MicroFlash has been able to more than hold its own. Comstock credits the company's employees for coming up with some of the best suggestions in regards to implementing ideas and services. "We are really people-oriented," she says. "We welcome feedback from our staff. It's a real open-door policy around here."

Another strategy that MicroFlash has used to counter the competition is increasing local marketing. "We have trimmed our national advertising and put more of those dollars into local advertising and services," says Comstock. "I can tell you that, in this kind of business, when users expect good prices, the profit margins are small. So, you have to be able to supplement your business with volume and services. We found out that a lot of our business is local."

While most mail-order companies would enjoy clients from all over, Comstock says she is content with MicroFlash's regional popularity. "In addition to advertising in *PC World*, we'd *like* to feel we are prominent locally," she says and adds, "Even local mail-order customers who need support like to feel they can touch base with the company."

— Tim Tyler

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Whether you're a serious techie or just a person in need of a new disk drive, you would do well to check out the sizeable inventory and wide selection of JDR Microdevices in San Jose. In addition to running a thriving mail-order service, JDR also operates a retail store featuring computer parts, components and accessories. "We carry just about everything you'd need to build your own IBM PC except the motherboard," reflects store manager Vince Anderson, "and that we can get."

The store has been operating since 1981, and has prospered to such an extent that it's about to expand its floor space to accommodate its growing product line. While JDR sells no computers or software, it carries just about everything else a computer owner or hobbyist might need, from chips to monitors to diskettes; if a customer needs something that the store doesn't carry, such as motherboards, JDR can special order it. Indeed, JDR is something of a computer do-it-yourselfer's paradise, being one of the largest dealers of chips in Northern California. ("To come in here and shop," says advertising/promotion director Gene Sakalay, "you've got to know the difference between a silicon chip and a Dorito . . .")

The store's current pride and joy is a complete line of oscilloscopes, which range in size from a battery-powered handheld model to a heavy-duty 35mHz unit. The oscilloscopes are the first in a new private label line of JDR Instruments, which will be featured in the space gained when the store expands its floor space, a process currently under way.

As to why the store is growing when many retailers and manufacturers are experiencing a serious slump, Sakalay remarks, "Even though the market is soft, JDR still offers the best pricing, and the public supports us." RGB monitors, for instance, start at $299, a price Sakalay and Anderson proudly maintain is the best in the area.

Once a year, JDR holds a parking lot sale. This year the event took place on June 22 and was, as usual, a rousing success. Customers came from far and near, and lined up outside a 30 × 50 foot tent to take advantage of the bargains: everything in stock was at least 10% off, and many items were more drastically reduced. JDR also gave away 50 gallons of lemonade and 800 hot dogs to the crowds.

You don't have to wait for the next sale, though, to benefit from the store's low prices and wide selection. The store stays open till 9 pm on Tuesdays and Thursdays, and on weekends customers come in from such distant points as Modesto to take advantage of JDR's awesome deals.

Mary Eisenhart

PHOTO: MARY EISENHART

Gene Sakalay (l) and Vince Anderson discuss the fine points of JDR's new oscilloscope line.

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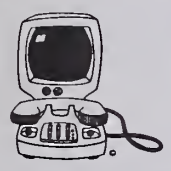

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SYSTEM BUGS

Ware And Tare

By John Barry and Michael Wiesenberg

First came hardware. From the entrance of the word into the English language in 1515 until the mid-20th century, **hardware** meant merchandise or goods made of metal. When **software** entered the language about 1962, hardware took on the meaning of the electronic or mechanical parts of a computer, as opposed to the programs that run the computer.

For about 20 years hardware and software were the extent of computer wares. Early in the '80s, the public-relations and advertising folks started fooling with the language, and words like **courseware** and **thoughtware** began to show up in ads and the writing of computer journalists.

Ware is a nebulous term, referring variously to articles of merchandise or manufacture, goods, or any intangible items, such as services of artistic or intellectual creativity, that are salable. The PR people and computer writers use the suffix to refer to classes of software. Neologisms in common use today include the name of a line of educational software, **Knowware,** and the name of a company that specializes in time management software, **TimeWare. Courseware** is the in way to refer to educational software.

Common categories include:

NOUNWARE

This method of inventing words consists of taking a noun, such as **game,** and adding **ware** to form the category of software. Thus computer games become **gameware,** and books on disk become **bookware.**

ABSTRACTIONWARE

Adding **ware** to an idea gives us **thoughtware** and **ideaware.** Both terms are applied to "thought processors," the alleged software analog of Professor Henry Higgins.

Altruistic programmers give away software, usually by distributing on computer bulletin board networks, where it is called **freeware** and **shareware.**

Computer columnists gleefully refer to the practice of many computer companies of announcing products while they are still in the development stage, and thus not likely to appear on the market when promised, as **airware** or **vaporware.**

BRANDNAMEWARE

Adding **ware** to a company's name to refer to its line of products is a strategy of some companies such as Peachtree Software, with its **Peachware,** and Human Engineered Software, with its **HESware.**

PUNWARE

Whimsical products attempt to capitalize on the computer craze by punning on the **ware** suffix. Seen at recent computer shows were briefs packed in diskette boxes labeled **Underware.**

CUTESYWARE

When something catches on, there's no escape from trendy wits who try to force its manifestations into popular parlance. The same people who use "interface with" in normal conversation to mean "relate to," and who refer to taking sick leave as "downtime," issue invitations to high-tech company parties offering **foodware** (snacks) and **wetware** (booze).

OUTOFHANDWARE

Is it all getting out of hand? Or is creeping wareism only in its embryonic stages? Soon you'll see:

LOOKINGANDFEELINGGOODWARE

Wearware. Don't know what to put on in the morning? Having trouble coordinating your outfits to "dress for success"? This software helps you select your wardrobe. (Not to be confused with **where?ware, weigherware,** or **waryware.**)

Hairware. Good looks mean good grooming. This software helps you plan and implement your coiffure. (Not to be confused with **hareware, hayerware,** or **Hare-ware.**)

Weighware. You've spent a fortune on wearables and wares, but you can't look good looking like a blimp. This software helps you plan your diet. (Not to be confused with **wayware** and **wheyware.**)

PHILOSOPHYWARE

Wayware. Clothes make the man and woman, but you have to take care of your spirituality as well as your haberdashery. This software is for those who seek the correct path in life. (Not to be confused with **weighware** or **wheyware.**)

Taoware. This wayware is for practitioners of Oriental religions. (Pronounced dow-ware, and not to be confused with **Nowware,** particularly if you have a toad in your doze.)

Hare-ware. This wayware for Krishnaites computerizes chanting and cymbal clanging, puts airport literature into a database, and quickly retrieves techniques for avoiding getting punched out. (Not to be confused with **hayerware, hairware,** or **hareware.**)

Prayerware. This wayware provides a database for ministers, priests, rabbis, and others.

AGRIWARE

Hayerware. This vertical-market software for farmers plans mowing, baling, and storing of silage. (Not be confused with **hareware, hairware,** or **Hare-ware.**)

Hareware. Helps rabbit breeders keep track of and improve stock. (Not to be confused with **hayerware, hairware** or **Hare-ware.**)

Noahware. This related product inventories animals carried on boats. (Not to be confused with **noware, nowwhere,** or **Knowware.**)

Wheyware. Another vertical-market package, it shows how best to maximize the use of byproducts of cheese production. (Not to be confused with **weighware** or **wayware.**)

Hartware. Helps deer raisers keep track of stock. (Not to be confused with **hardware.**)

SELFHELPWARE

Noware. For the shy person, this software gives the courage to disagree. (Not to be confused with **nowwhere, Knowware,** or **Noahware.**)

Waryware. Also for the shy person, teaches self-defense in the form of confrontation avoidance. (Not to be confused with **wearware, where?ware,** or **weighware.**)

Hearware. Improves your hearing; it's also great for electronic eavesdropping. (Not to be confused with **here!ware.** Known in parts of England as **'earware,** where it is not to be confused with **'ereware.**)

Sumware. The next generation of **Knowware,** this ware improves your ability to do addition.

NEware. This dictionary program is for those who have trouble spelling words containing n's and e's.

LOCATIONWARE

Where?ware. Helps those who get lost easily to know their location at all times. (Not to be confused with **wearware, weighware,** or **waryware.**)

Here!ware. This software gives your current location. (Not to be confused with **hearware, here!ware** is often used instead of **where?ware,** although the two wares have been combined into an integrated package known as **herethereandeverywhereware.** Known in parts of England as **'ereware,** where it is not to be confused with **'earware.**)

Nowware. A calendar program for those who never know what time it is.

BUSINESSWARE

Silverware. Helps jewelers keep track of precious metals.

Carebearware. Helps toystore operators keep track of Xmas fad inventory.

Weigherware. Calibrates scales for all lines of businesses. (Not to be confused with **wearware, where?ware,** or **waryware.**)

Wireware. For owners of hardware stores (the old-fashioned kind); keeps track of portions of electrical inventory. (Not to be confused by Southerners with their pronunciation of **wearware, where?ware,** or **weigherware.**)

EVERYWARE

This list of **wares** to come is only the beginning. Computerists have a compulsive need to transform ordinary words into impressive-sounding euphemisms. For example, one emerging company plans to incorporate the philosophical question *quo vadis?* ("whither goest thou?") into its logo, to read, "Ware are you going?"

However, even the most creative flacks may run out of the cerebral warewithal to keep coining new wares.

To solve this problem, one company has a program to generate ware-names. Yep, you guessed it. The name of the program is **wareware.** □

From time to time, we receive pieces that don't really fit our established editorial formats. Cartoons. Esoteric hints for programmers in languages yet uninvented. Humor articles. In vain we plead, "No, no, we don't do that stuff." People keep sending it anyway, and somewhat to our consternation, occasionally something comes along that overcomes our editorial resistance.

So, to make a long story short, we decided to create a new page for all that material that doesn't fit anyplace else, and to christen it in honor of that fine public domain software which causes hordes of insects to march across the screen of whatever legitimate application you happen to be using. We think this strikes the proper note.

If you, gentle reader, have some particularly intriguing bit of computer-related silliness, off-the-wall information or other bizarre communique to the world at large, send it to us: System Bugs, MicroTimes, 5951 Canning St., Oakland, CA 94609. The editorial resistance is still there, but surprise us.

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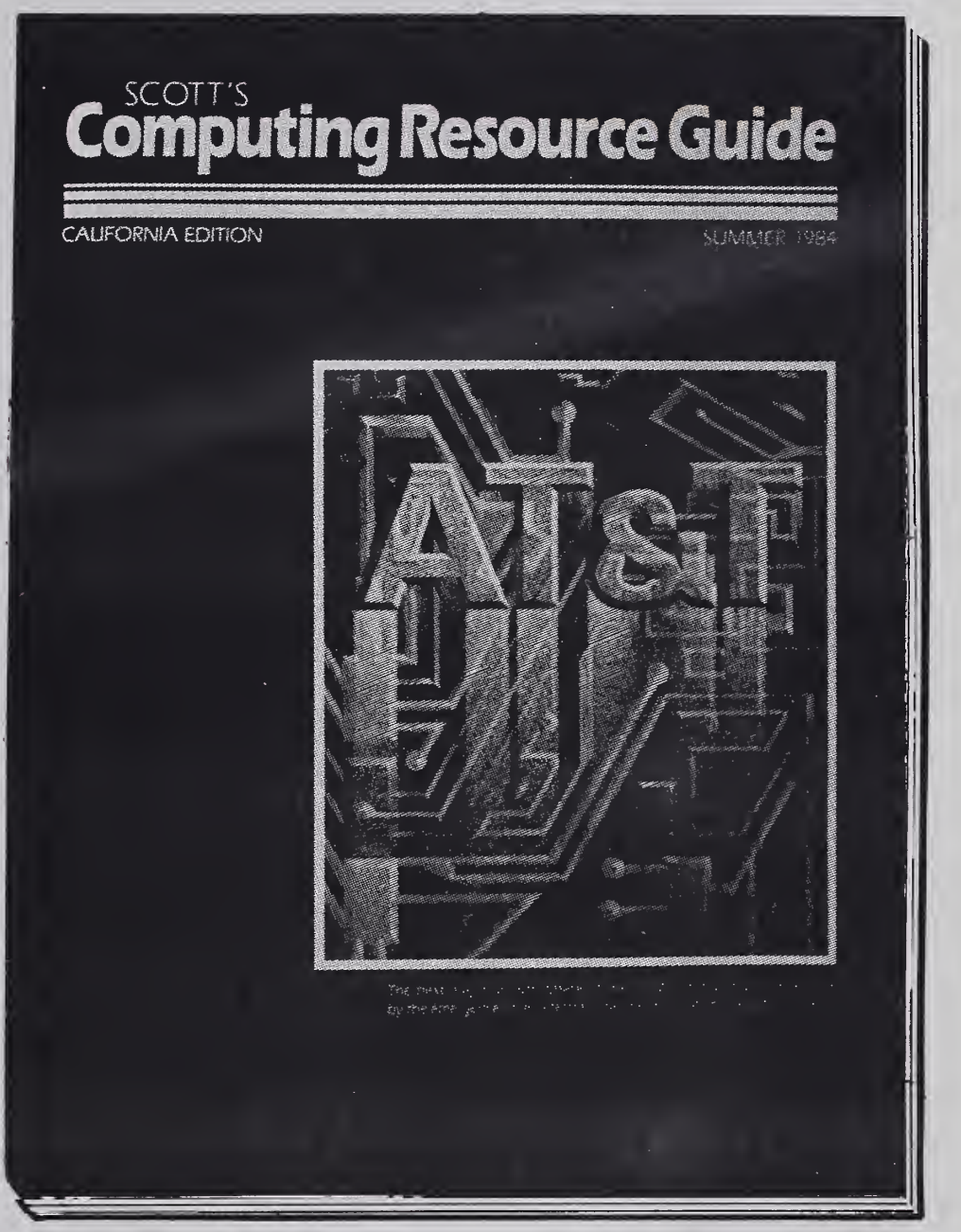

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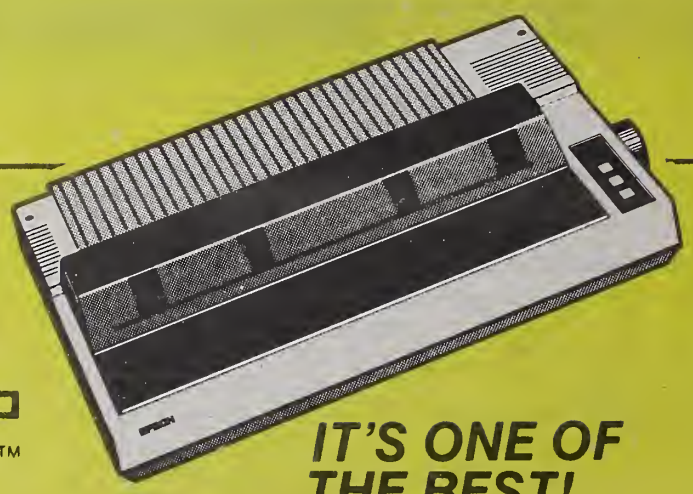

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